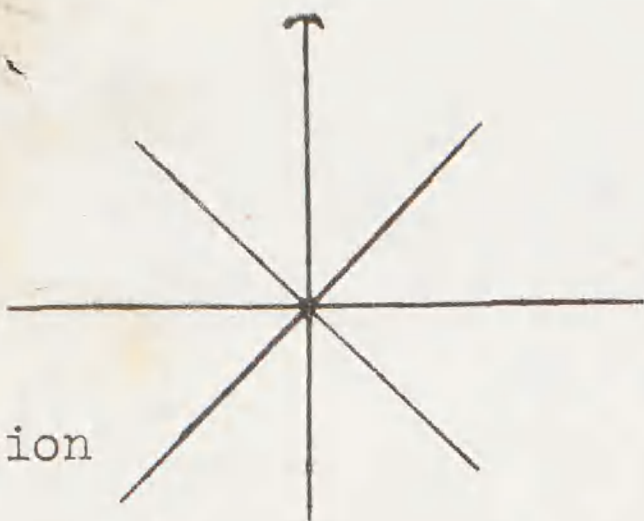


Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 28 Feb 67  
Pg.# 1

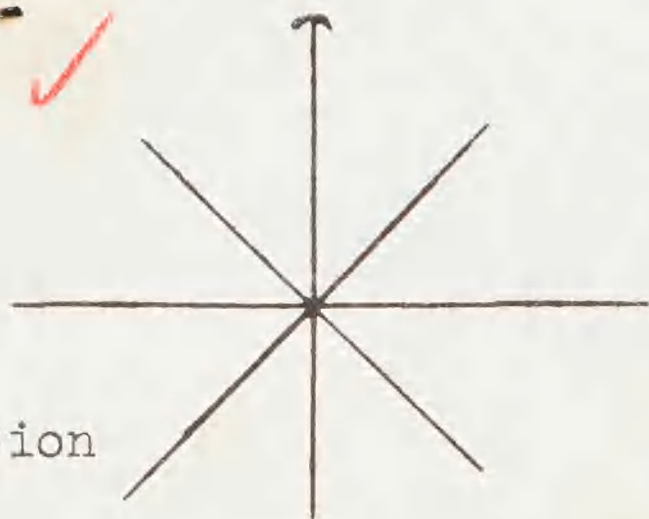
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0630					begin
0633	WRSP	1	@		
0640	WRSP	1	@		
0655	WRSP	1	@		
0720	Shear Pet	1	@		dark
0728	WRSP	1	@		
0806	WRSP	1	@		
0807	R. Phalarope	1	@		
0821	Leach's	1	@		
0940	Leach's	1	@		
0953	WRSP	1	@		
1030					stop
1415					GO
1527	WRSP	2	@		
1530	Sooty Tern	3	@		2 Ad 1 imm
1532	WRSP	1	@		
1535	Dark Rump	1	@		beautiful
1540	Sooty Tern	2	@		Ad + imm
1543	WRSP	1	@		
1547	WRSP	7	@		
1554	WRSP	1	@		
1645	Sooty Tern	1	@		Ad
1818					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:  
R/U Jordan  
1 March 1967

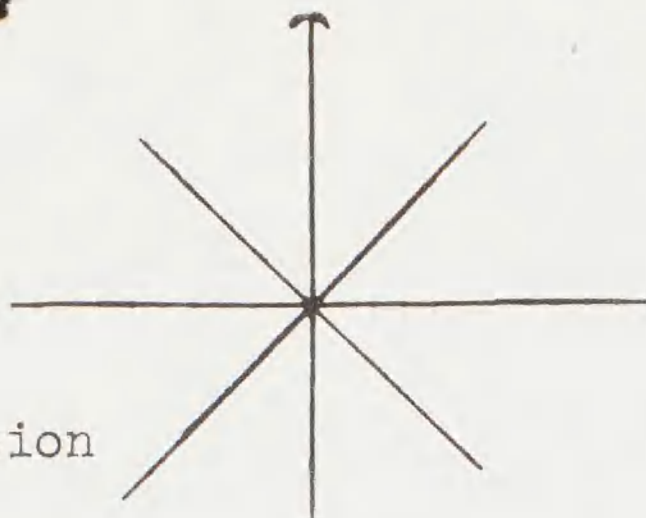
Date March 1 67  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0700					begin
TF 0816	Sooty Tern	9	SE		Ad
0914	Pterodroma	1	a		med size white below
0918	Fairy Tern	1	a		
0919	<del>W. Petrel</del>	1	e		
0922	WRSP	1	a		
0930	WRSP	2	NE		
0946	BWP	1	a		over manta ray with 2 small sharks in front
0952					one pure white
1012	Leach's	1	a		Sperm whale 1
	BWP	1	a		
1020	Leach's	1	a		
1029	WRSP	1	a		
1038	Leach's	1	a		
1043	WRSP	2	e		
1047	BWP	2	e		
	WWR	1	e		
1100	WRSP	a	e		
1330					Stop
1406	WRSP	1	a		go
1422	WRSP	1	a		
1426	Phalaropes	1	a		
1611	Fairy Tern	1	e		
1820					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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SPECIMEN  
or

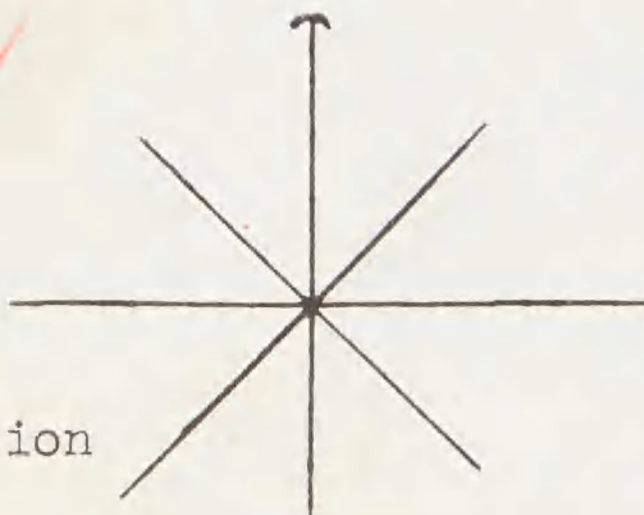
Nocturnal

Date 1 March  
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2130					begin
2235	Sooty Tern	1	a		Ad
2240	Sooty Tern	2	a		Ad - calling
2246	Sooty Tern	1	a		Ad
2305	Phalarope	1	a		calling
2318	Sooty Tern	4	a		3 Ad limn calling
2320	Fairy Tern	1	a		
2321	Phalarope	1	a		calling
2334	Sooty Tern	2	a		Ad - calling
2345	Sooty Tern	2	e		Ad calling
2353	Shear. Pt	1	a		
2359	sooty tern	1	a		



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

R/V Jordan

Date 2 March 1967  
Pg. # 1

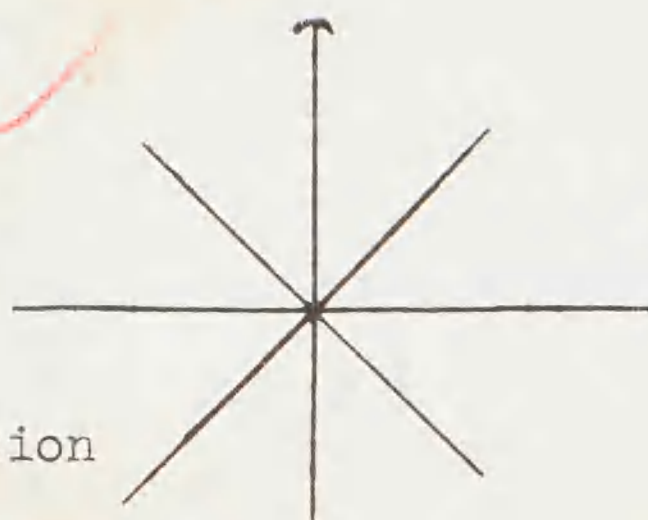
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0630				begin
	0631	Shear Pet	1	a	dark
	0734	WRSP	1	a	
	0759	WRSP	1	a	
	0816	Fairy Tern	2	a	
TF	0825	Sooty Tern	7	s	Ad
	0845	Sooty Tern	2	a	Ad
	0846	Fairy Tern	1	a	
	0945	RTTB	1	a	
	0952	BWP	2	a	
	0958	BWP	1	a	
	1015	BWP	1	a	
	1020				
	1030				hammerhead 12', 3' width
	1345	Nasutiger	1	a	playing in wake - Stop Observations
	1400				Begin Observations
	1447	Tahiti	1	a	70
	1456	WWP	1	a	
FE	1527	Sooty Tern	20		
		JFP	1		
		Fairy Tern	2		
	1536	WWP	1		
	1655	WWP	1		
	1709	WWP	1	li	
		W.th.SP	2	e	
	1718	W.th.SP	1	a	
	1726	WRSP	3	a	(not Leach's)
	1729	R. Phalarope	3	a	
	1738	WWP	1	a	
	1746	WRSP	1	a	
	1755	RTTB	1	a	↓
	1820				Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:  
R/U Jordan

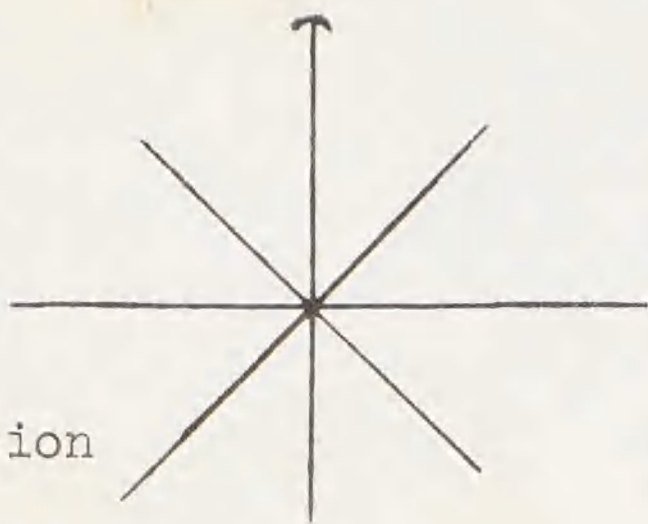
Date 3 March 1967  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0800					begin
0810	WWP	1	a		
0840	W. th. S.P.	1	a		
0856	<del>Pterodroma</del> WWP	2	a		small
0902	WWP	1	a		
0903	WRSP	1	a		
FF 0910	Sooty Tern	13			} flying fish schools of 50+ chased up by skipjack
	Fairy Tern	1			
	RFB	1			
	WWP	6			
	JFP	1			
0922	WRSP	1			
1058	WWP	2	e		
1100					Stop Observations
1430	WRSP	1	a		Begin Observations
1431	W. th. S.P.	1			
1436	WWP	2	e		
1440	WRSP	1	a		
1517	WWP	2	a		
F 1519	WWP	6	e		out H <sub>2</sub> O
1521	RFB	1	e		overship
1529	WWP	1	e		
1556	WWP	1	e		80
1606	Murphy's	1	a		
1608	WWP	3	e		
1611	JFP	1	a		
1613	WWP	1	e		
FF 1625	Sooty Tern	23	a		Ad over jumping fish 8" skipjack
1634	WWP	1	e		
1705	WWP	2	e		
	Murphy's	1	e		
1821					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

R/V Jordan

Date 4 March 1967  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0700					begin
0710	WWP	1	W		
0720	WWP	2	E		
FF 0825	Sooty Tern	12			
	WWP	4			
	JFP	1			
	Kermadec	1			
	Murphy's	2			
	Fairy Tern	2			
	RTTB	1			
0846	R. Phalarope	1	W		
C 1000	RTTB	2	E		
1218	Murphy's	1	W		
1315	RTTB	1	W		
1430	st pet. sp	1	W		
1503	slenderbill	1	NE		
FF 1755	kermadec	6			
	WWP	6			
	JFP	4			
	Murphy's	3			
	Leach's	2			
	WRSP	2			
1812	Pterodroma sp	1	W		
(1819)					
1823					

light

flying fish

coll me - stop observations

Begin Observations

begin

way out

39  
24  
63

63

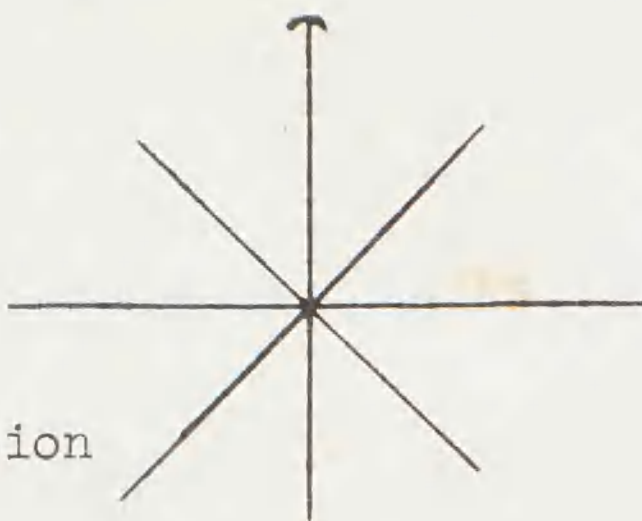
Small, hypoleuca or leucoptera

Sunset

Sunset PW



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

R/V Jadan

Date 5 March 1967  
Pg. # 1

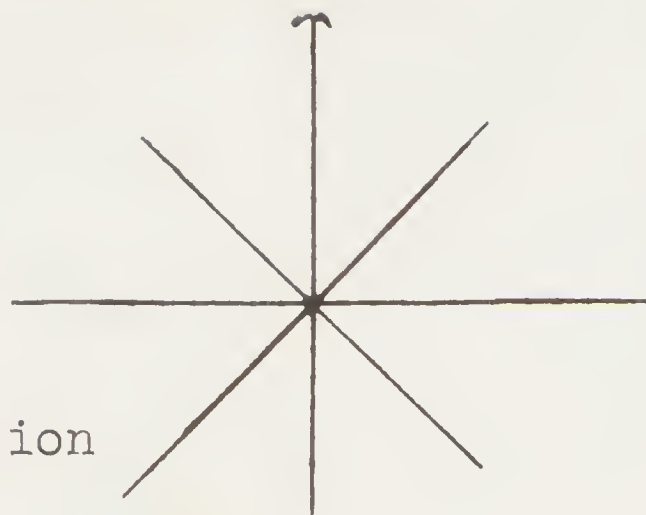
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0716	BFB	1	a		imm overshij
0718	BWP	1	a		
0720	RTTB	1	a		
0722	RTTB	1	a		s. ad - overshij
0803	BWP	1	a		S Ad -
0826	BWP	1	a		11
0859	R. Phalarope	1	a		
0906	Pterodroma	1	a		
0907	WRSP	1	a		on H <sub>2</sub> O large, JFP like with flashy white patch on
0930	Leachs	1	a		dorsal surface of wing
1030		2	a		
1345					stop
1410	Shear. Pet				go
1505	R. Phalarope	1	a		
1555	RTTB	1	a		
1635	Slenderbill	1	a		S Ad overshij
		1	NE		



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 6 March  
Pg. # 1

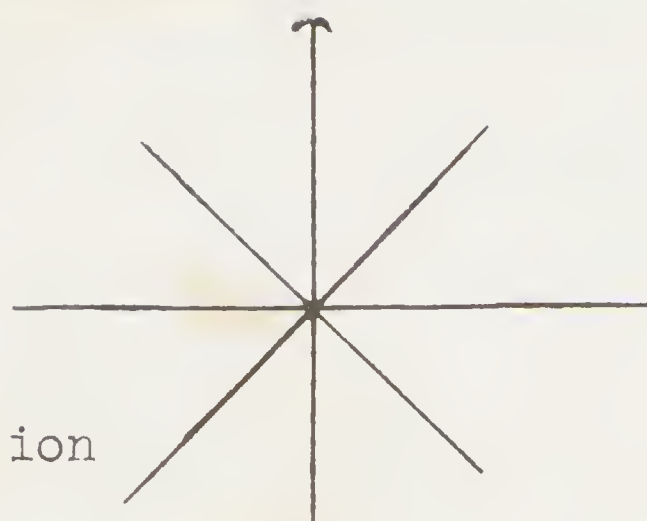
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0812	BWP	1	e		
0826	R. Phalarope	1	a		
1030					
1123	RTTB	1	a		stop
1400					go
1540	R. Phalarope	1	a		
1545	R. Phalarope	2	a		
1630					close



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 7 March  
Pg. # 1

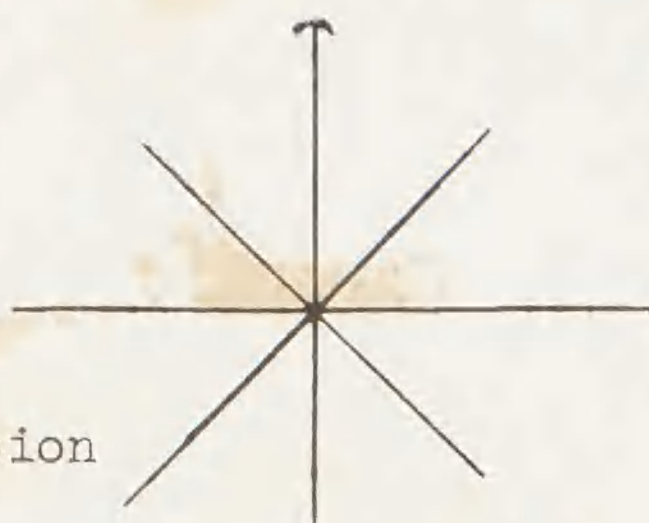
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0733	DFP	1	a		in Wake
0759	JFB	1	e		
0802	Pterodroma	1	e		small
0807	RTTB	1	a		over ship
0825	RTTB	1	a		over ship dove + caught flying squid
0830	RTTB	1	e		joined 0825 stayed until 0842
0859	RTTB	1	a		over ship
1130					stop
1700					
1759	BWP	1	a		begin



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 8 Mar  
Pg.# 1

SPECIMEN  
or

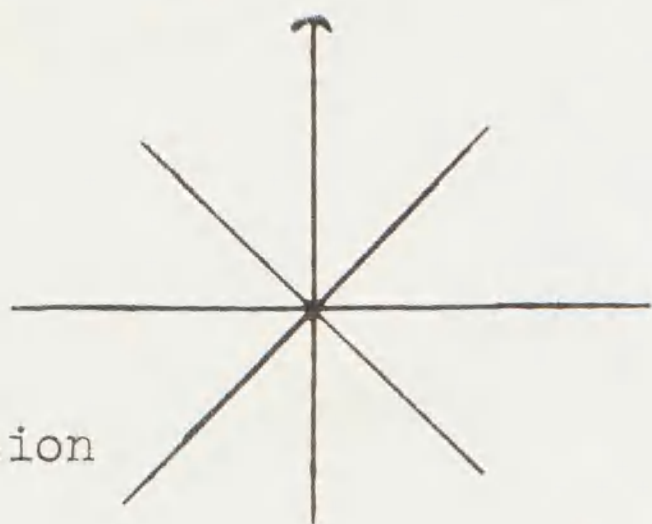
TIME SPECIES # DIR. BAND NO. REMARKS

0630					Surfs up
0646	RTTB	1	a		over ship
0658	BWP	1	a		
0707	Shear-Pet	1	a		
0725	BWP	1	a		
0810	Shear Pet	1	a		
0841	BWP	2	a		white below, <del>way</del> way out, man
0844	BWP	1	a		on H <sub>2</sub> O
0927	RTTB	1	a		
0936	BWP	1	a		SAd overship
0940	WRSP	1	a		
1045	Shear-Pet	1	a		on H <sub>2</sub> O
1058	BWP	1	a		
1111	Leach's	1	a		
1130		1	a		
1300					Stop
1315	Shear-Pet	1	a		Go man
1316	Leach's	1	a		Small dark, Bulwer's or Leucopterna brevipes
1322	RTTB	1	a		
1435	Leach's	1	a		
1509	RTTB	2	a		overship SAd
1526	WRSP	1	a		on H <sub>2</sub> O
1539	Pale-foot	1	a		SAd
1622	RTTB	1	a		<del>SAd</del>
1643	RTTB	1	a		SAd
1721	Shear-Pet	1	a		
1725	Pom. Jaeger	1	a		dark
1740	RTTB	2	a		light
1745	WRSP	1	a		
1746	Fairy Tern	1	a		
1750	BWP	1	a		
FF 1800	Sooty Tern	1	a		
	Pom Jaeger	7056	a		
	L.T. Jaeger	4			
		2			
1835	WRSP	2	a		
1837					Sunset

189



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 9 March  
Pg.# 1

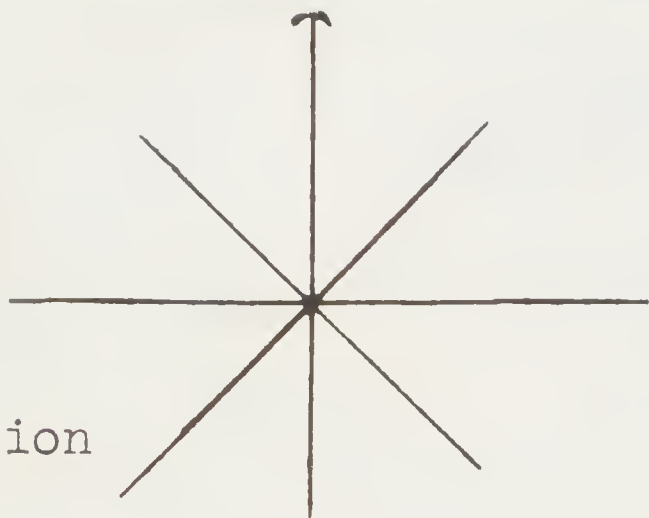
SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0700	begin				
0701	Leach's	1	a		
0825	Shear-Per	1	a		
0836	Murphy's	1	a		
0845	BWP	1	a		
0915					
FF 0945	Sooty Tern	7	e		Yellow fin feeding on flying fish, jumping out of H <sub>2</sub> O shows Golden flash under water 18"-20"
	Fairy Tern	4	a		
	Pom Jaeger	1	a		
1100	Leach's	1	a		ad light
1105	Leach's	1	a		1 white tipped shark
1122	Leach's	1	a		
1230					
1430					
1452	W.th.SP				stop
1706	Leach's	1	a		
1832	Leach's	1	a		
1845					Sunset





Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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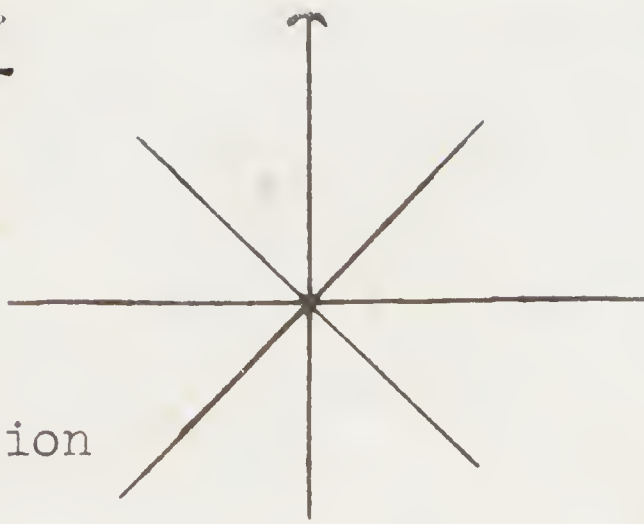
Date 10 March  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0715	W. th. S.P.	1	a		- in wake
1100					stop
1400					go
1456	RTTB	1	Q		s. Ad
1735	Shear-Pet	1	a		





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

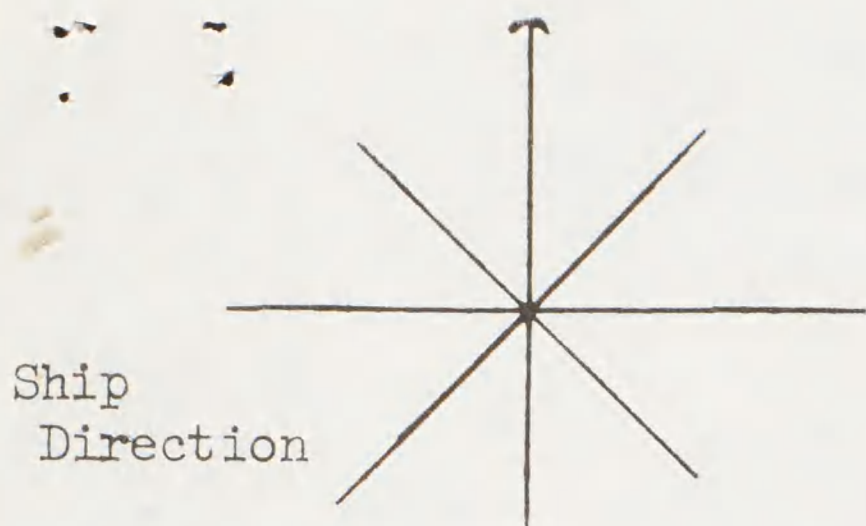
OBSERVERS:

Date 11 March  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0800					begin
0833	BWP	1		a	choppy, grey, light rain squalls
0851	BWP	1		e	Ad Yimm
1058	Sooty Tern	12		a	Stop
1100					





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 11 Mar  
Pg. # 2

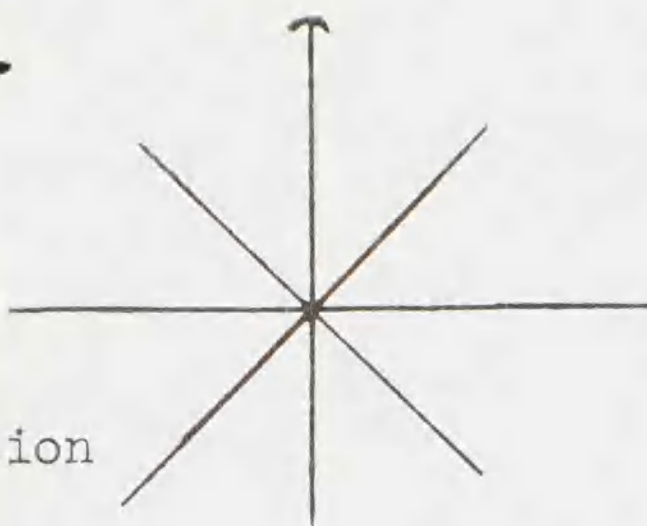
SPECIMEN  
or

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
SF	1504	Sooty Tern	7			6 Ad 1 imm
		WRSP	1			
	1517	WRSP	1			
	1528	Leach's	1	a		
	1609	WWP	1	a		
	1624	Sooty Tern	1	a		
FF	1630	Sooty Tern	1	a		Ad
	1644	WRSP	70±	a		
	1725	Prodruma	2	a		
			1	a		small

1736  
1 Fterm.



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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SPECIMEN

or

DIR. BAND NO. REMARKS

*Nocturnal*

Date *11 March*

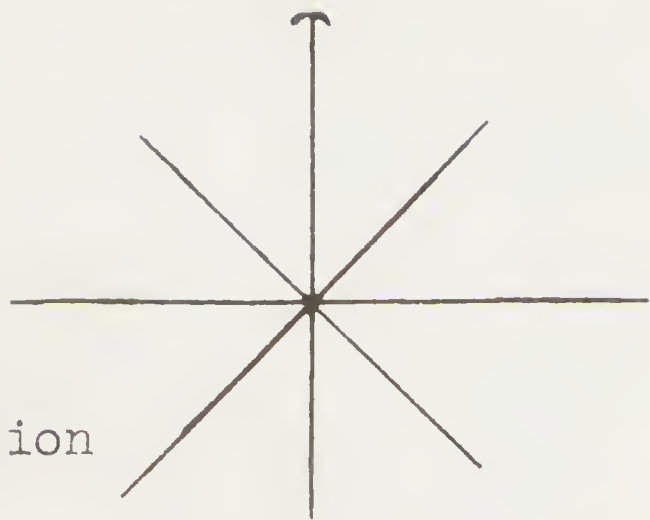
Pg. # *1*

*Drifting - mist*

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2130					<i>begin</i>
2132	WRSP	1			
2134	R. Phalarope	6			<i>calling</i>
2147	Sooty Tern	3			<i>calling</i>
C 2154	Sooty Tern	2			<i>calling Ad coll</i>
2205	Sooty Tern	4			<i>"</i>
2210	WRSP	1			
2212	Sooty Tern	3			
2215	R. Phalarope	3			
C 2220	Sooty Tern	7			<i>imm coll</i>
2227	WRSP	1			
2229	Sooty Tern	3			
2240	Sooty Tern	4			
2245	R. Phalarope	3			
2246	WRSP	1			
C 2254	Sooty Tern	9			<i>total of 12 calling and flying around ship</i>
2304	Sooty Tern	3			<i>S. Ad coll</i>
2308	Sooty Tern	1			
2309	WRSP	1			
2318	Sooty Tern	6			
2322	Sooty Tern	2			
2324	WRSP	1			
2326	Sooty Tern	5			
2334	Sooty Tern	2			
2337	WRSP	1			
2338	Sooty Tern	8			
2344	Sooty Tern	11			
C 2352	Sooty Tern	3			<i>1 coll</i>



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 12 March  
Pg.# 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1000					Go
1030					stop
1430					go
F 1436	Leach's	5	e		on H <sub>2</sub> O
1438					White tipped shark 5'
1450	Leach's	1	e		
1456	Leach's	1	e		
1510	Leach's	1	e		
1536	Leach's	2			
1540	Leach's	1			
1548	Leach's	1			
1552	R. Phalarope	1	e		
1822	Leach's	2	e		
1827	Leach's	1	e		





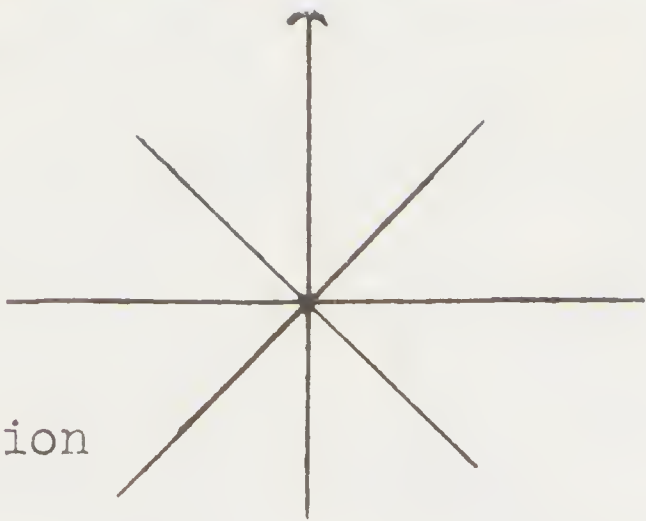
OBSERVERS:

Date 13 March  
Pg.# 1

[illegible]

SI-MNH-958-e  
Rev. 5-66





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN  
or

(Nocturna)

OBSERVERS:

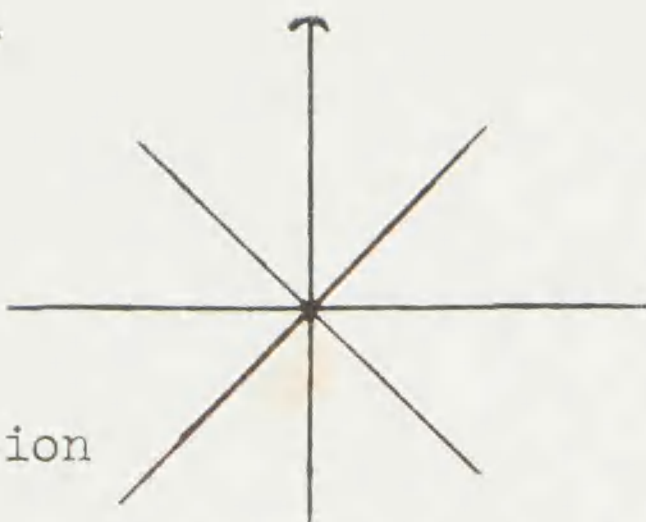
Date 13 March  
Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

2130					begin
2315	WRSP	1	a		
2400					end



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 14 March  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0634 \_\_\_\_\_  
0645 R. Phalarope 1 e Surprise on H<sub>2</sub>O

0646 WRSP 1 q  
0647 Leach's 1 q

0709 Leach's 1 e  
0742 WRSP 1 e

0743 WRSP 1 e  
0745 WRSP 1 a  
0746 WRSP 1 q

0754 R. Phalarope 1 a  
0755 WRSP 3 a

0800 Leach's 2 e  
0804 R. Phalarope 1 a

0806 WRSP 1 e  
0810 WRSP 1 a  
0811 WRSP 1 e

0818 WRSP 1 e  
0822 Leach's 1 a

0827 Leach's 3 a  
0830 \_\_\_\_\_

0832 Leach's 2 e porpoises 25

0837 WRSP 2 e  
0841 Leach's 2 e

0847 WRSP 1 a  
0853 \_\_\_\_\_

0856 Leach's 2 e porpoises 10

0900 \_\_\_\_\_  
0904 WRSP 1 e porpoise 1

0910 WRSP 1 e  
0911 Leach's 1 e

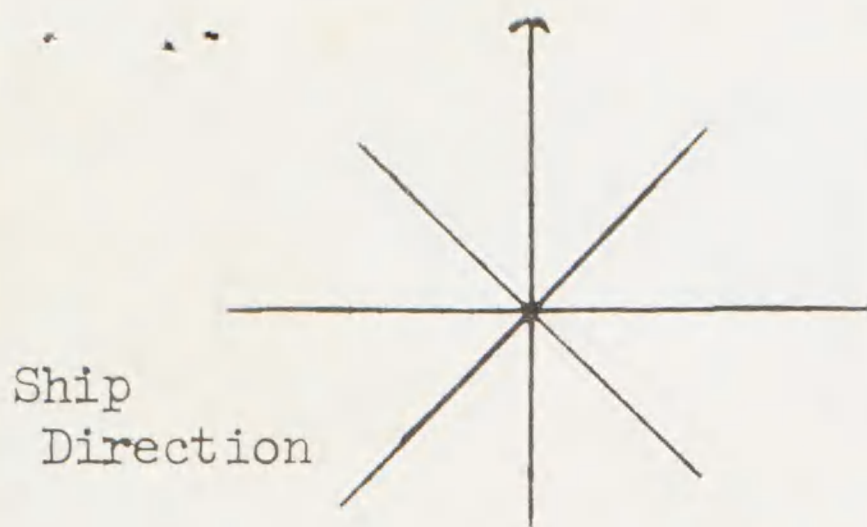
0920 Leach's 2 e  
0921 R. Phalarope 1 e

0935 Leach's 2 e JFP on small species?

0938 R. Phalarope 4 e  
1006 Leach's 1 e

1008 R. Phalarope 1 e  
1026 R. Phalarope 3 e





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 14 March  
Pg.# 2

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1044 Porpoise 20

1045 WRSP 2 a

1048 WRSP 1 e

1055 WRSP 1 a

1102 Leachs 2 a

1115

1435 Leachs 1 a

1500

1532 Leach's 2 a

1535 Leach's 1 a

1541 Leach's 1 a

1556 Leach's 1 a

1704 Leach's 1 a

1710 2 a

1711 Leach's 2 a

1712 Cook's Per 1 a

1719 Leachs 1 a

1730 Leachs 1 a

1735

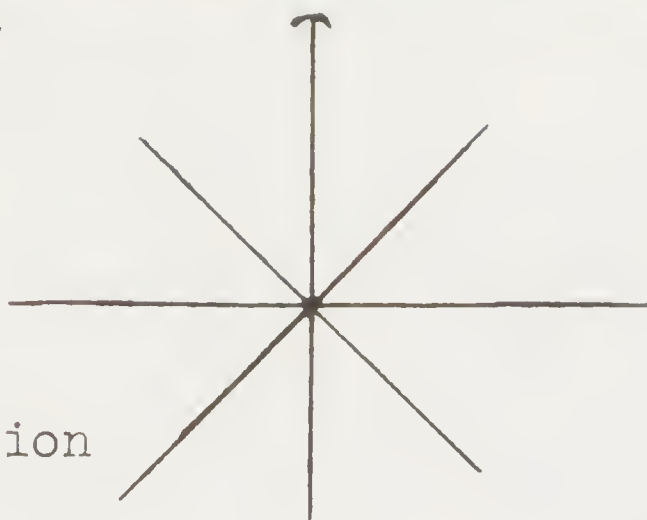
1736 Shear-Pet 1 a

1738 Leach's 2 e

Pelphinas type porpoise 8

30± Stenella





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

SPECIMEN  
or

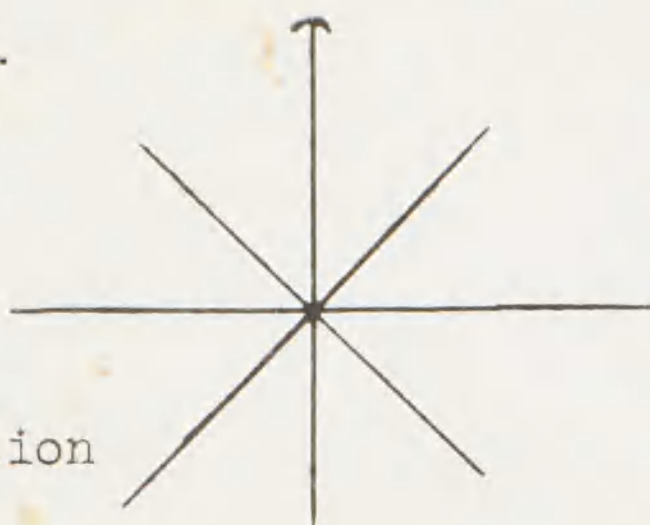
Nocturnal

Date 14 March 67  
Pg. # 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2230					begin
2245	R. Phalarope	4	a		calling Rain
2256	R. Phalarope	2	a		" "
2315	WRSP	1	a		
2319	WRSP	1	a		
2345	WRSP	1	a		
2400					stop



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 15 March 67  
Pg. # 1

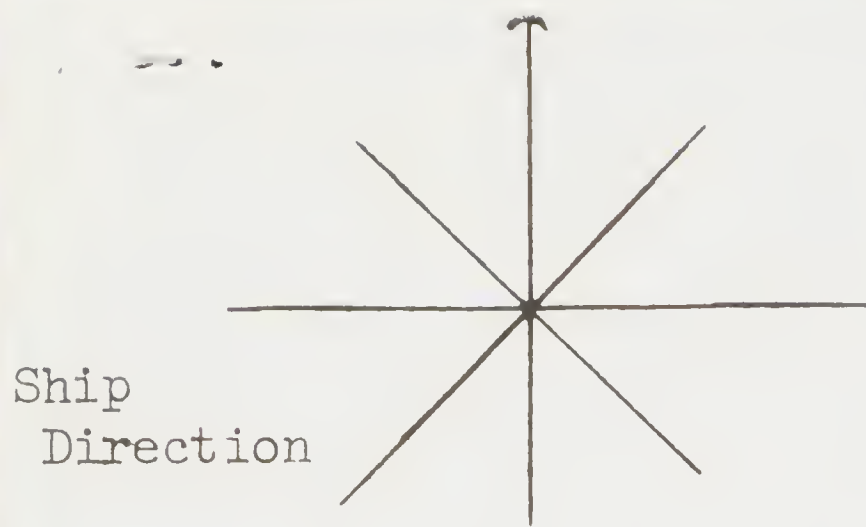
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700	bovin				
0718	Leach's	1	a		
0722	Leach's	1	a		
0725	Pterodroma	1	a		
0728		1	a		large or small that is the question porpoise <u>delphinus</u> 15-20
0812	Leach's	1	a		
0815	Leach's	1	a		
0819	R. Phalarope	1	a		
0836	Leach's	1	a		
0842	Leach's	1	a		
0902	Leach's	1	a		
0903	R. Phalarope	1	a		
0905	R. Phal.	2	a		
0914	R. Phal.	1	a		
0931	Kermadec	1	a		
1024	Leach's	1	a		light
1038	Leach's	1	a		
1044	Leach's	1	a		
1050		1	a		
1100	<del>stop</del>				20± Delphinus
1530					begin
1540					
1550					Delphinus 60±10
1620	RTTB	1			Whale 3 to' no visible dorsal fin small blow 1/2 straight
1814	Leach's	2	a		color brownish grey observed within 20 yds
1830	R. Phalar.	2	a		541 over ship calling







Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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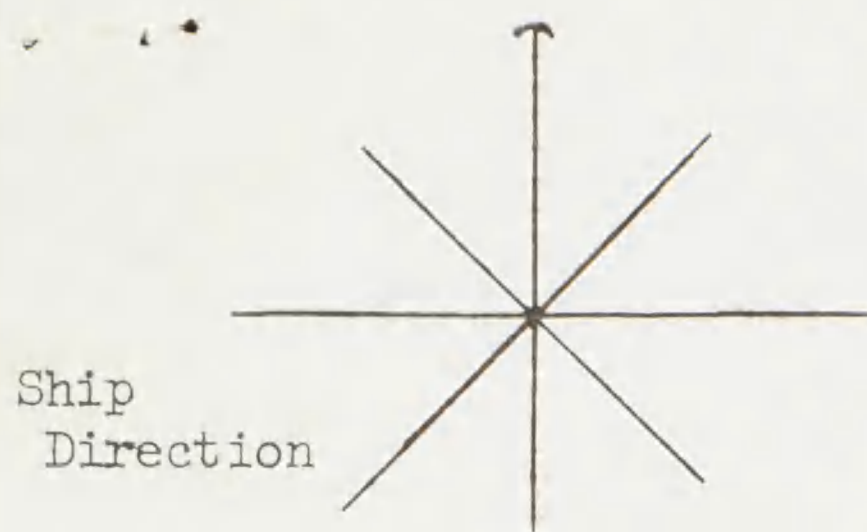
Date 15 March  
Pg.# 1

SPECIMEN  
or

*Nocturnal*

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2130					begin
2145	R. Phalarope	3	a		calling
2220	Shear Pet	1	a		large white below + unfurling JFP?
2310	Sooty Tern	1	a		imm
2315	Shear Pet	1	a		all dark with white belly <i>imm?</i>
2330	Sooty Tern	1	a		
2335	R. Phalarope	2	a		Ad
2350	Sooty Tern	1	a		calling
			a		Ad





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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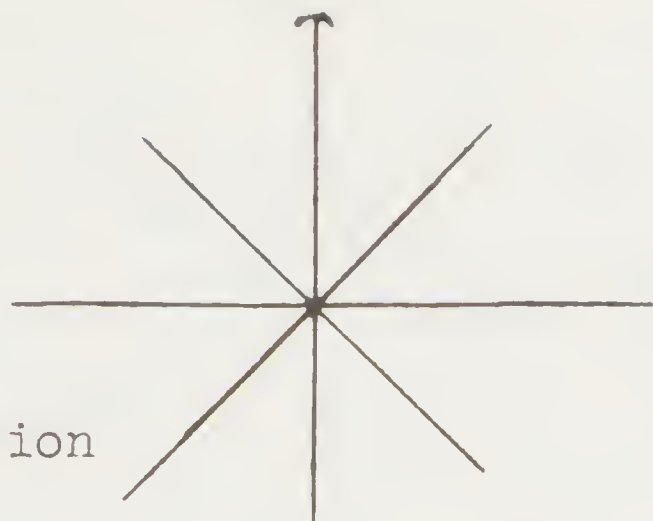
Date 16 March  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0638	survive				
	0700	R. Phalarope	1	a		calling 1/20
	0758	WRSP	1	a		
	0809	R. Phalarope	1			4/20
	0811	R. Phalarope	1	a		4/20
	0850	Kermadec	1	a		
	0857	R. Phalarope	1	a		light
	0903	WRSP	1	a		
	1000		1	a		
	1132	Puffinus sp	1	a		STIP
	<del>1138</del>					Wedge-tail or Pink foot
	1345					90
	1350	R. Phalarope	1	a		
	1357	Leach's	1	a		
	1412	Cook's	1	a		
	1414	WRSP	1	a		
	1423	R. Phalarope	1	a		
	1428	Wth. SP	1	a		
	1429	Cook's	1	a		
TF	1435	Sooty Terns	15	a		
	1440	Pterodroma	1	a		
	1444	R. Phalarope	2	a		JFP?
	1445	Leach's	2	a		
	1450	JFP	1	a		
	1451	W. Th SP	1	a		Flashy white patches
	1452	Wedge-tail	1	a		
	1453	Leach's	2	a		light
	1455	Leach's	2	a		
	1503	Leach's	2	a		
	1506	WRSP	1	a		
	1518	Leach's	1	a		
	1539	WRSP	1	a		
	1540	WRSP	2	a		





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 16 March  
Pg.# 2

Pg. #

SPECIMEN

or

[illegible]

TF	1620	Sooty Tern	10	a	Ad
	1730	RTTB	1	a	calling, imm
		Par. Jaeger	1	a	chasing, Ad dark
	1940	R Phalarope	1	ev	
	1825	JFP	1	e	
	1829	WRSP	1	a	
	1841				Sunset



75

102

120

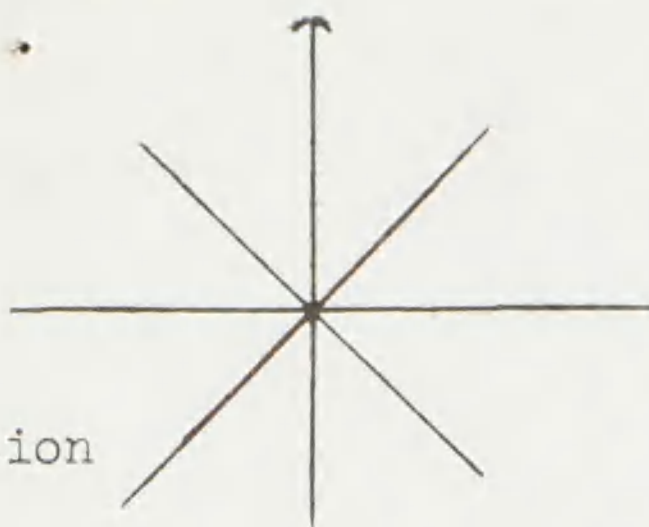
60

50

15  
Total



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 17 March  
Pg. # 1

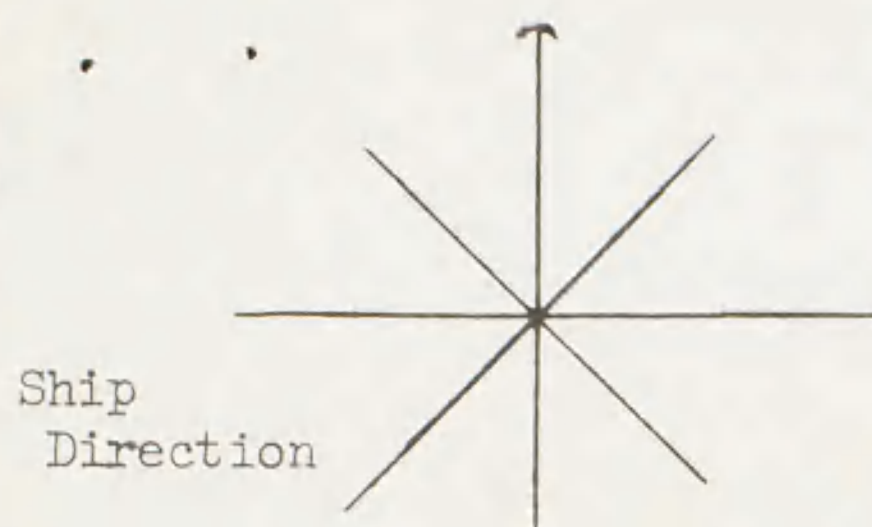
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0700				begin
	0710	Leach's	1	a	
C	0715	Wedgetails	2	W	1 coll light ♂
	0720	Leach's	1	a	
	0725	Wedgetail	1	W	light
	0727	<del>WRSP</del> <del>WRSP</del>	1	a	
	0735	WRSP	1	a	
	0737	Wedgetail	1	W	light
	0744	WRSP	2	a	
	0746	Wedgetail	1	W	dark
	0751	Wedgetail	2	W	dark - light
	0759	WRSP	2	W	light
	0806	WRSP	1	a	
	0812	Kermadec	1	a	light
	0813	WRSP	1	a	
	0815	R. Phalarope	1	a	
	0820	Wedgetail	1	a	callery
	0822	Wedgetail	1	a	light on 1000
	0827	WRSP	1	W	light
FF	0830	Sooty Tern	2	cl	
		Wedgetail	100±10	a	imm 1 coll ♂
	0840	R. Phalarope	120±10	a	85% light = 102L 180
	0845	WRSP	1	a	
	0906	Leach's	2	a	
	0910	Wedgetail	1	a	
	0918	BB	1	a	intermediate
	0922	Leach's	1	a	SA4
H	0924	Sooty Tern	4	a	1 coll
	0925	Wedgetail	11	NW	Ad
	0929	Sooty Tern	1	a	light
	0930	WRSP	1	a	imm

$\frac{6}{177} \frac{0}{30} \frac{3}{32}$





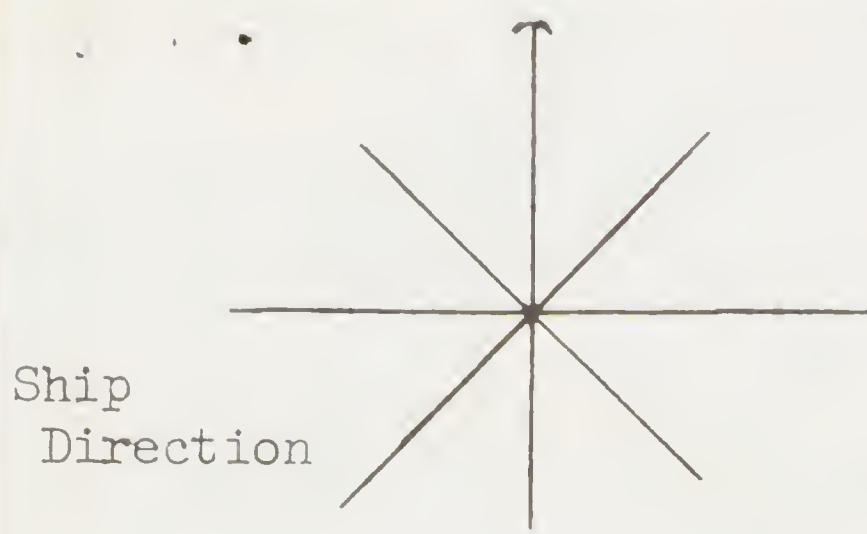
SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date Nov 17  
Pg. # 2

		SPECIMEN or		DIR. BAND NO. REMARKS	
TIME	SPECIES	#			
	JFP	1	a		
	WRSP	1	a		
F 0940	Wedgetail	45	e		40 light 5 dark on H <sub>2</sub> O
F 0955	Sooty Tern	40	a		
	Wedgetail	10	e		
1010	wedgetail	1	w		Light
1015	Sooty Tern	3	PW		Ad
1016	Wedgetail	1	N		15m
1020	Wedgetail	1	a		dark
F 1021	Leach's	2	e		
1025	Leach's	5	a		H <sub>2</sub> O
1028	Leach's	2	a		
1030	DRP	1	a		Stop
1035	wedgetail	2	a		light + dark
1135	RTTB	1	a		
1300	RTTB	1	a		
1320	Wedgetail	1	a		90
F 1345	Wedgetail	9	a		light
1350	Leach's	1	a		on H <sub>2</sub> O
F 1355	Sooty Tern	35	e		
	Wedgetail	10	a		
1418	Br. Jaeger	1	a		imm
1419	Wedgetail	2	a		light
1420	Leach's	1	a		
1430	Leach's	1	a		
1437	Wedgetails	1	a		light
1458	wedgetail	2	e		"
1502	DRP	1	a		light
1505	wedgetail	1	a		
FF 1525	Sooty Tern	37	e		
	Wedgetail	2	e		





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

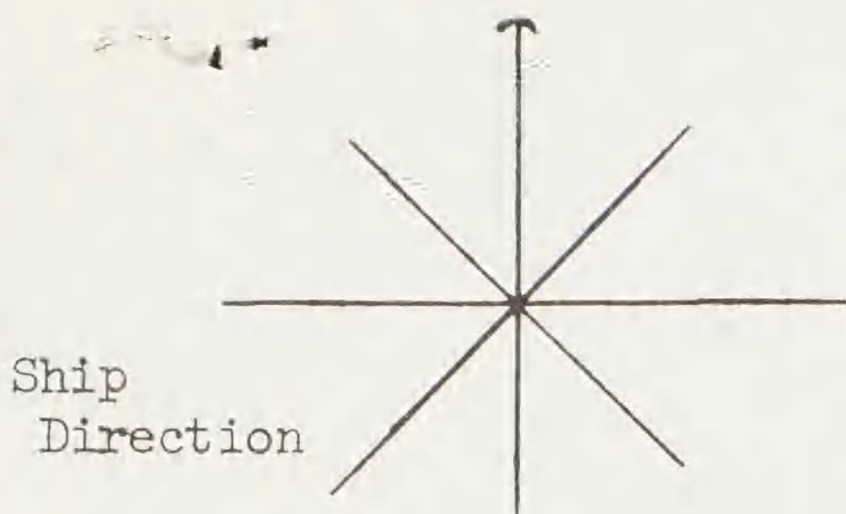
OBSERVERS:  
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Date 17 March  
Pg.# 3

SPECIMEN  
or  
TIME SPECIES # DIR. BAND NO. REMARKS

	1532	wedgetail	1	a		1.5 hr
	1535	Wedgetail	1	e		1.5 hr
		<del>Leach's</del>	<del>1</del>	a		"
		Tahiti				
	1528	Leachs	3	a		
FF	1545	Sooty Tern	7	e		1.5 hr
		Wedgetail	6	a		1.5 hr
		JFP	1	a		
		Tahiti	1	a		
	1550	DRP	1	e		
	1555	Leach's	3	a		
	1615	DRP	1			
	1620	JFP	1			
	1622	Leach	1			
	1626	Leach	2			
	1630	Leach	2			
	1820	Leachs	1			
	1823					Shark
FF	1825	Wedgetail	10	a		3 drake
		Sooty Tern	1	a		
	1827	Leachs	1			





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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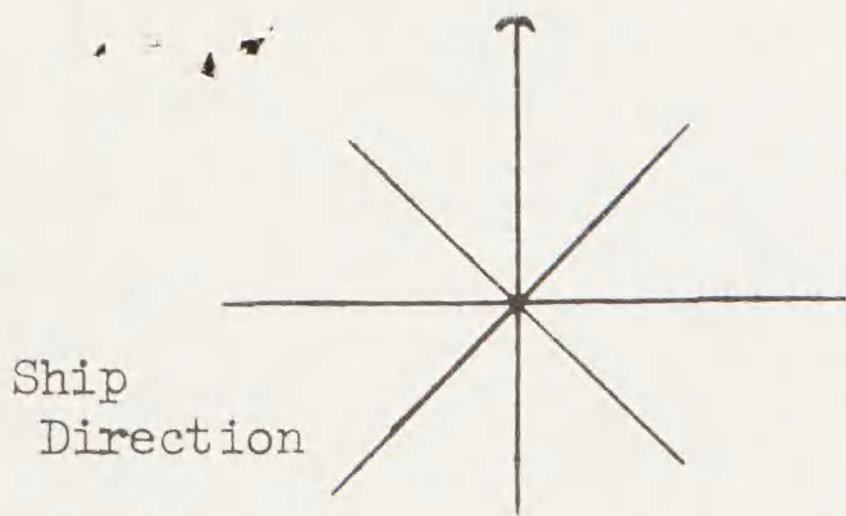
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Date 18 March  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0730					begin
0754	BFB	1	e		Ad.
0756	RFB	1	e		imm
0759	R. Phalarope	1	e		
0801	Leach's	1	e		
0802	RTTB	4	e		
0810	RTTB	1	e		sad over ship calling
0820	Leach's	1	e		joined others
0911	Leach's	1	a		
0928	Leach's	1	a		
0930	Leach's	1	a		
0933	Leach's	1	a		
0945	Leach's	2	a		
0946	Leach's	1	e		
0948	Leach's	1	a		
0958	<del>BEF</del> Red-tail	1	e		
1015	Leach's	6	e		5 AD
1048	R. Phalar.	3	e		H <sub>2</sub> O
1100					stop
1145	RTTB	1	a		
1250	Leach's	1	a		
1302	Leach's	3	e		
1320					go
1335	Leach's	11	a		H <sub>2</sub> O
1345	Leach's	7	e		
1350	<del>Leach's</del>	1	e		wing coverts browner, slightly smaller
1352	Leach's	1	a		
1354	Leach's	4	a		Loggerhead
1358	Leach's	4	e		
1400	Leach's	4	e		





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 18 March  
Pg. # 2

SPECIMEN

or

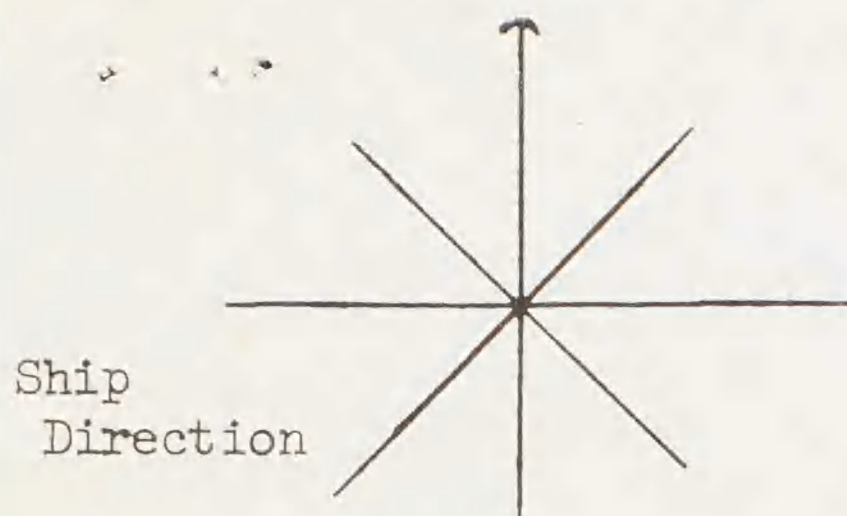
TIME SPECIES # DIR. BAND NO. REMARKS

F	1410	Leach's	1	e		
	1415	Townsend	2	N		
	1419	Leach's	5	e		
	1422	Leach's	1	e		
	1615	RTTB	1	e		S. No)
	1711	Leach's	1	e		
	1720	Leach's	2	e		
	1725	Townsend	1	a		
	1730	Leach's	1	e		
	1744	Leach's	1	e		
	1746	Leach's	1	a		
		WRSP	1	a		
	1758	Leach's	1	e		
	1800	Townsend	1	e		
	1815	Leach's	1	a		
	1820	Leach's	1	e		
	1825	Leach's	1	e		
	1832	Leach's	1	a		
		Least	1	a		
	1836	Least	1	a		
	1840					Sunset

21  
89  
90

18  
58  
28 26





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 19 March  
Pg. # 1

SPECIMEN  
or

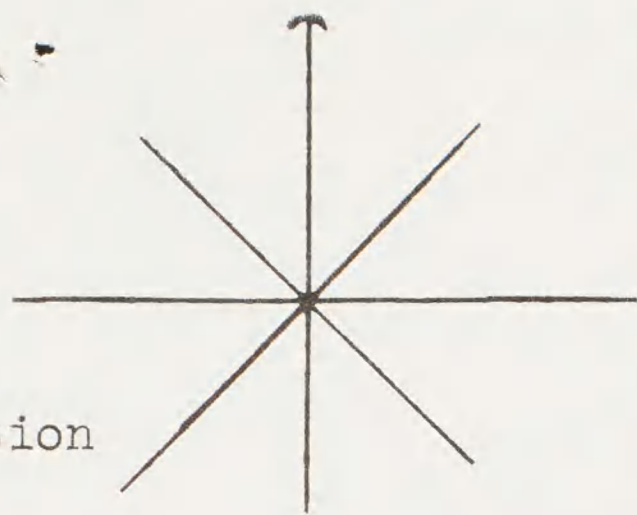
TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0730					begin
0731	BFB	1	a		500
0753	WRSP	1	e		
0803	WRSP	1	a		
0805	Leach's	1	e		
0806	R. Phalarope	1	e		
0825	WRSP	1	e		
0836					Whale jumping out of H <sub>2</sub> O 3 times, each time landing on its back
0832	Leach's	1	e		dark
FF 0845	Sooty Tern	10			Ad
	Townsend	25			
	RTTB	1			
0908	WRSP	1	a		
0909	R. Phalarope	1	a		
0925	R. Phalarope	2	a		
0938	Townsend	1	a		
0940	WRSP	1	a		
0943	Townsend	2	a		Ad
0945	Sooty Tern	2	E		Ad
0946	Leach's	2	a		dark
1000	Leach's	2	a		Ad light
1002	BFB	1	a		
1003	Leach's	1	e		
FF 1006	Sooty Tern	10	a		
	Townsend	20	a		
	Leach's	1	a		
1030	Leach's	2	a		
1100	Leach's	2	a		
1112	Leach's	2	a		
1115	Leach's	2	a		
1116	Townsend	1	e		

25-30' bld above pink below  
short pectoral flippers  
baleen whale 45'

99



OBSERVERS:

Ship  
Direction
 SMITHSONIAN INSTITUTION  
 DIVISION OF BIRDS  
 AT SEA DAILY LOG - E
SPECIMEN  
orDate 19 March  
Pg.# 2

TIME SPECIES # DIR. BAND NO. REMARKS

1120 Leach's 2 e

1130 Pom Jaeger 1 a

1145 RFB 1

1200 Leach's 2 a

1215 Townsend 1 e

1230 Leach's 1 e

1245

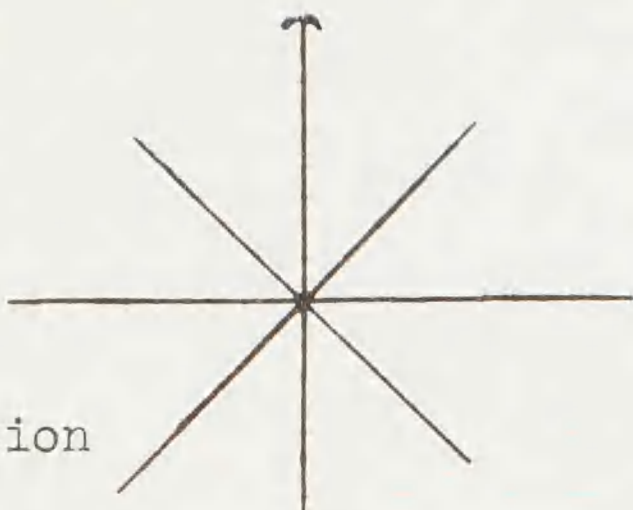
1 mm

Adelphi

Stop



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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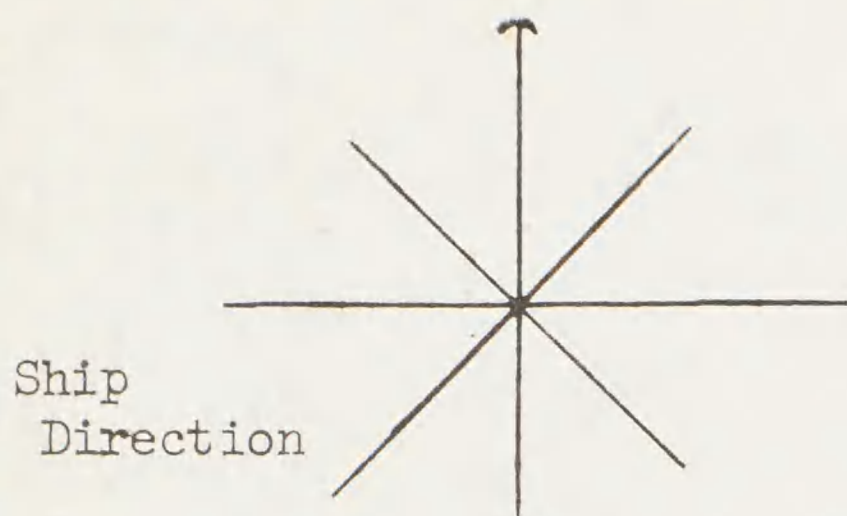
Date 20 March  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0718	Townsend	3	e		
0727	BFB	2	N		
0808	Townsend	2	a		
0816	Leach's	1	a		dark
0826	Townsend	1	a		
0831	Townsend	2	N		
0842	Townsend	1	N		
0846	RFB	2	W		light
0858	Townsend	2	NW		
0900	" "	1	a		
1002	Townsend	1	N		
1004	RFB	1	W		Ad light
1006	RFB	1	W		
1008	Townsend	2	a		
1010	RFB	1	W		Ad light
1022	Townsend	1			
1023		1			1 Balloon whale
1025	Townsend	1	a		45-50'
1028	Townsend	1	a		
1030	RFB	1	a		
1036	Townsend	1	a		Ad light
1048	Townsend	1	a		
1055	Leach's	1	e		
1056	Townsend	1	e		
		2	a		
1100					500
1500					90
1620	Townsend	1	W		
1623	Townsend	1	W		
1626	Townsend	1	a		
1627	WRSR	1	a		
1639	Townsend	4	a		





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 21 March 67  
Pg.# 1

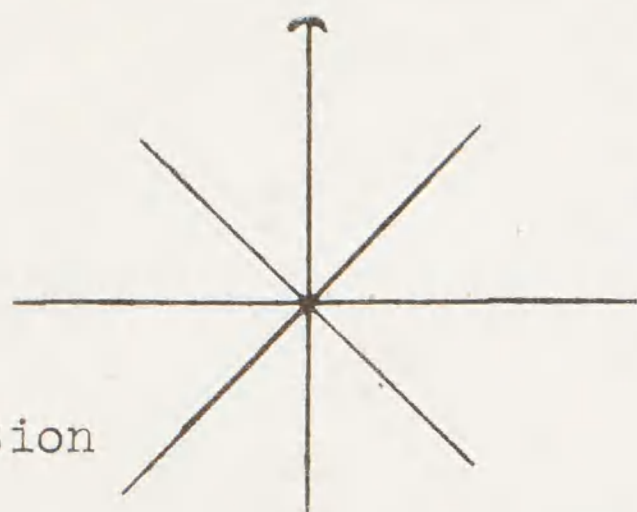
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0800					begin
0801	Townsend	4	N		
0807	Leach's	1	a		
0809	Townsend	4	N		
0812	Townsend	4	a		H <sub>2</sub> O
0825	Townsend	4	e		
0842	R. Phalarope	1	a		
0905	Leach's	1	a		
0906	Townsend	1	N		
0910	Townsend	2	N		
0917	R. Phalarope	1	a		
0926	Townsend	2	N		
0928	Townsend	2	N		
0930	Townsend	4	N		
0944	Leach's	1	a		



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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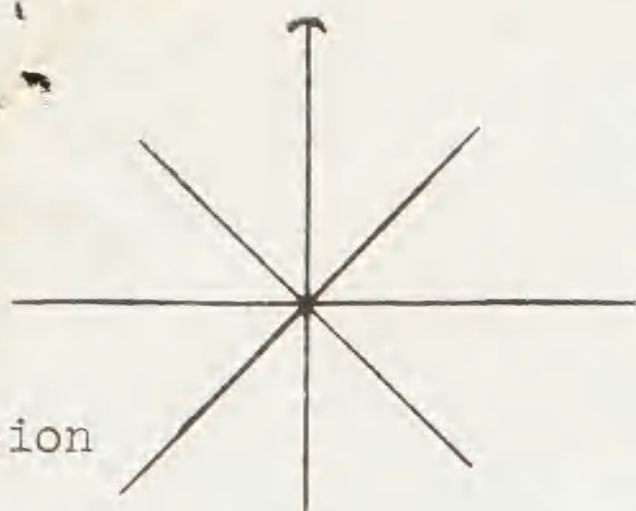
Date 22 March 1967  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0715	R. Phalarope	1	e		
0753	Cooks	1	a		
0755	Mag. Frigate	1	a		Ad ♀
0800					
0807	Cooks	1	a		2 Green Turtles <del>swimming</del> ♂
0900					
1500					Stop 50
1501	Leachs	1	a		
1514	Leachs	1	a		
1522	Leachs	1	a		
1525	Leachs	1	a		
1531	Leachs	1	a		
1550	M. Frigate	1	a		Ad ♀
1552	Leachs	2	a		
1605	Leachs	2	a		





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 8 Feb 1967  
Pg. # 1

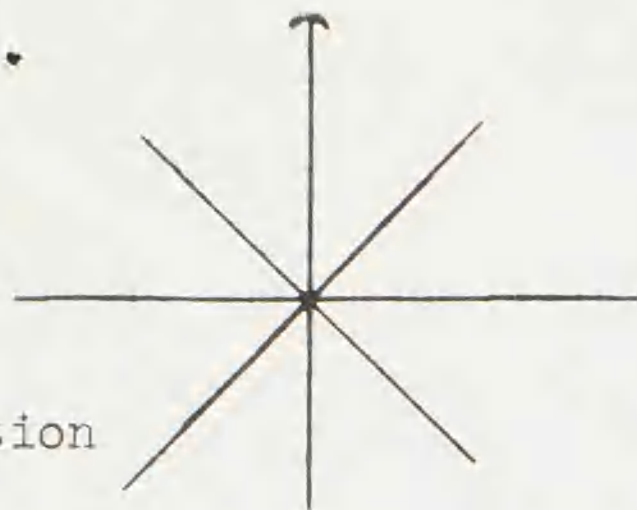
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

	074				sunrise
	0743	Bl. Ph.	2	Q	on H <sub>2</sub> O
	0744	Manx Shear	2	S	
	0745	BL. Kitty	4	Q	on H <sub>2</sub> O imm
	0746	BFA	1	Q	following
SFL	0746	Herring Gull	7	e	"
		Western	3	e	"
		Calif.	9	e	"
	0747	BL. Kitty	2	Q	imm
	0748	Herring	1	Q	
		Western	2	Q	
	0749	Sabine's	2	Q	imm
	0750	Kittywake	1	Q	imm
	0752	Gull	1	NW	
	0755	Western Gull	1	NW	2 y. old
	0756	Kittywake	1	Q	imm
	0758	Shear Pet	1	SE	probably Manx
	0759	Kittywake	1	NW	imm
	0800	West. Gull	1	NW	
	0804	West Gull	1	Q	Ad
	0805	Calif. Gull	1	Q	Ad
	0807	Kittywake	1	NW	imm
	0809	Whales			
FT	0820	Kittywake	4	Q	2 about 25' S
		Shear Pet	3	Q	school of fish, over large flash + sun water churning
	0822	Pom. Jaeger	1	NW	Ad light
		Kittywake	1	NW	imm } heading toward FT
	0823	H. C. Gull	1	Q	
	0827	Kittywake	1	Q	imm
		West Gull	2	NW	imm
	0830	Gull, Calif	1	NW	2 year
	0836	Kittywake	2	NW	Ad
			2	NW	imm



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 8 Feb  
Pg. # 2

SPECIMEN

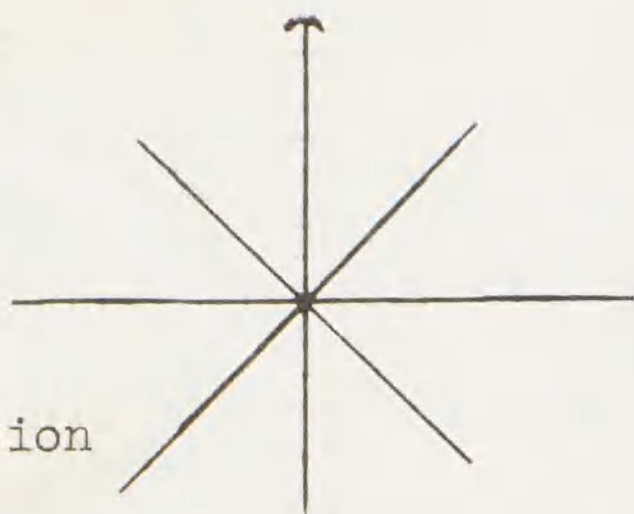
or

TIME SPECIES # DIR. BAND NO. REMARKS

	0845	Gull sp	1	Q	imm	
	0950	Kittywake	1	Q	imm	
	0951	<del>Red-t. Phar.</del>	1	Q		
	0852	whale				1 Lalleen - spout 15' and straight
	0854	West. Gull	1	Q	Ad	
	0908	Kittywake	2	N	imm	
	0915	"	1	Q	imm	
		Herring Gull	2	Q	imm	
	0918	Kittywake	2	N		
		Shear Pet	2	N		
	0927	Kittywake	1	N	imm	
SF	0930	Kittywake	6	Q	4 Ad 2 imm	on H <sub>2</sub> O
		Manx Shear	1	Q		
	0937	Herr. Gull	2	Q		on H <sub>2</sub> O
		Pom. Jaeg.	1	Q	imm	chasing Gulls
	0942	West. Gull	1	Q	2 year	
	0944	<sup>xaptus</sup> Murrelets	4	SE		black above white below, white underwing scapular
	0945	Kittywake	1			
	0948	Pom. Jaeg.	1	NW	Ad light	
	1006	Herr. Gulls	4	Q	Ad on H <sub>2</sub> O	
	1009	<sup>xaptus</sup> Murrelets	2	SE		same as above
	1020	Kittywake	3	Q	imm	
	1027	Pharelaesp	3	Q		
	1047	Kittywake	1	Q	imm	
	1120	Kittywake	1	Q	imm	
	1130					
SF	1145	Herring Gulls	14	Q	11 Ad 3 imm	Stop for drill + lower net
		Western Gull	1	Q	Ad	ship followers feeding
	1146	Kittywake	1	Q	imm	
	1230					
	1235	Kittywake	1	SW	imm	under way
	1318	Kittywake	1	Q	imm	
	1320	West. Gull	1	Q	Ad	
	1330	Whale				1 Large baleen spout 20' straight



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date Feb 8 1967  
Pg. # 3

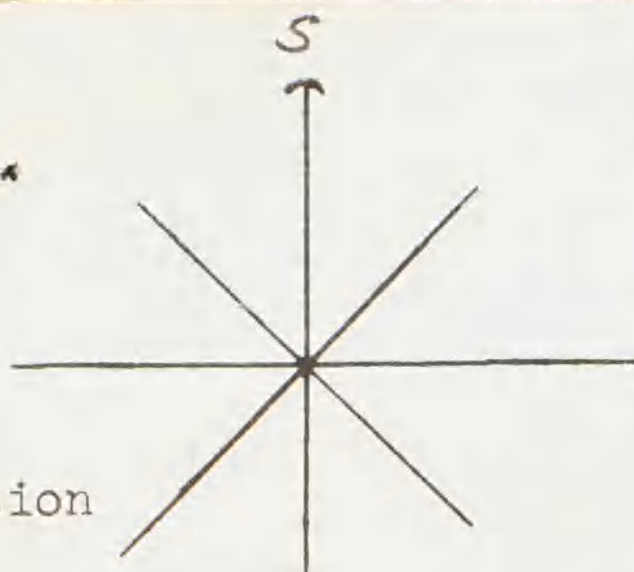
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1344	Kittywake	1	Q	imm	
	West. Gull	3	Q	Ad	
1346				Sealion	
1354				Shark about 13'	whitish grey color
1355	Herr. Gull	1	Q	2 year	
	Kittywake	1	Q	imm	
1547	Kittywake	1	E	imm	
1553				Sealion	
1602					
1604				2 Ocean Sunfish by kelp	
1615	Calif. Gull	1	Q	Ad	3 sealions around kelp
1641	Pom. Jaeger	1	Q	Ad Light	
1730				whale baleen spout 15'	
1745				close observations	



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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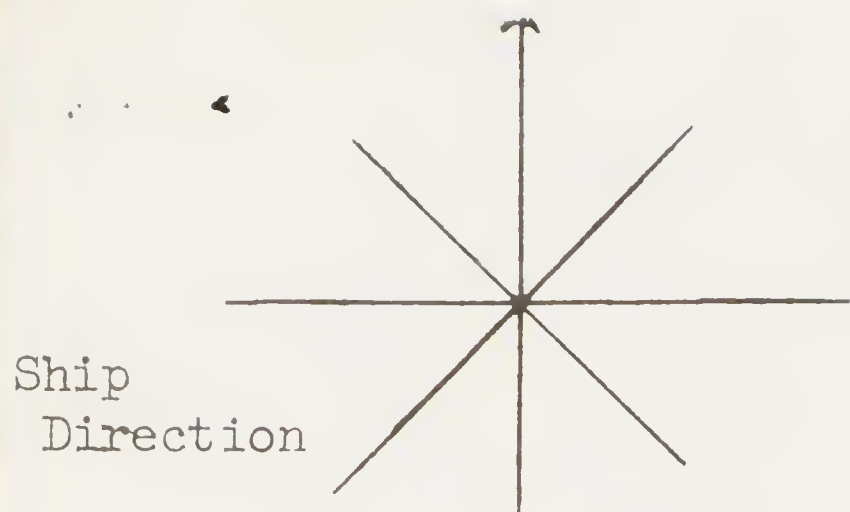
Date Feb. 9 1967  
Pg. # 1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
TF 0828	WRSP	5	W		sitting on H <sub>2</sub> O, then flew W
0829	WRSP	1	S		
0830	WRSP	1	Q		
0831	WRSP	1	Q		
0832	WRSP	1	Q		
0834	WRSP	1	Q		
0848	WRSP	3	S		
0857	WRSP	1	S		
0927	WRSP	4	Q		
0929	WRSP	3	Q		
0930	WRSP	2	Q		
0934	Ashy St. Pet	2	Q		smaller, flight steadier, tail less forked and shorter
0954	WRSP	2	Q		
TF 1002	WRSP	7	Q		on H <sub>2</sub> O
1015	WRSP	2	Q		
1021	WRSP	2	Q		
F 1025	WRSP	9	Q		Sitting on H <sub>2</sub> O
1042	DRSP	1	Q		Leach's or Ashy
1044	WRSP	1	Q		
F 1045	WRSP	17	Q		on H <sub>2</sub> O
1055	WRSP	1	Q		
1058	WRSP	2	Q		
1106					Shark 5' grey
1112	WRSP	1	Q		
1114	WRSP	1	Q		
1150	WRSP	1	Q		
F 1206	WRSP	18	Q		on H <sub>2</sub> O
1213	WRSP	1	Q		
F 1218	WRSP	16			on H <sub>2</sub> O
	Leach's ST. Pet	1			" "
1229	WRSP	4	Q		
E 1302	WRSP	6	Q		
1400					close observ
1730					begin watch
1829	WRSP	4	Q		
1834					Sunset close observ.

OK





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN  
or

Nocturnal

OBSERVERS:

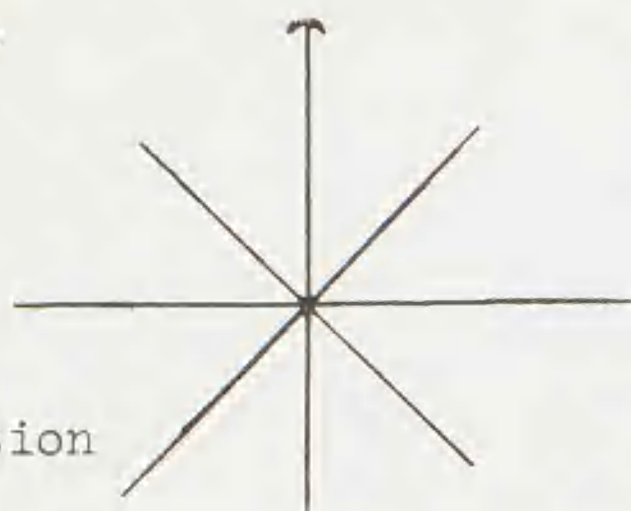
Date 9 Feb  
Pg. #

TIME SPECIES # DIR. BAND NO. REMARKS

2200					begin watch
2223	WRSP	1			
2301	Common Shear	1			auricularis race
2333	WRSP	1			



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

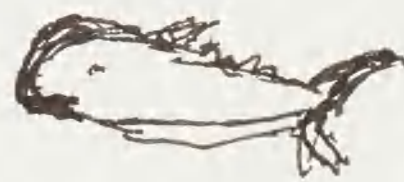
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Date 10 Feb 1967  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

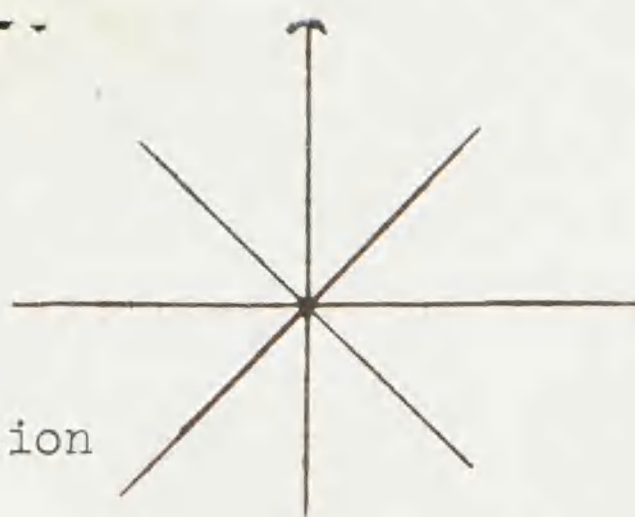
0715					sunrise <del>begin</del> observ.
0747	M. Frigate	3	Q		Ad ♀ chasing flying fish
0808	Cook's Pet	1	Q		
	Shear-Pet				P. homerani size, flew like a shorebird
0857	WRSP	1	Q		
1131	WRSP	1	Q		
1227	WRSP	1	Q		
1236	WRSP	1	Q		flying along edge of two H <sub>2</sub> O masses, <sup>southern</sup> one lighter than the other, a distinct line at convergence that ran SSE-NNW from horizon to horizon
1237	Cook's Pet	2	Q		
					flew of H <sub>2</sub> O Black "W" quite distinct, light head, also white flash on dorsal primaries like Pt. neglecta. Ventral wing surface white. Flight unlike any Pterodroma, shorebird like, giving the appearance of large Phalaropes. Wings bowed much more than any Pterodroma. Flight consists of a few downward emphasised flaps and a sailing with occasional banking in the sail.
1246	WRSP	2	Q		
1259	Leach's St. Pet	1	Q		
1308	Leach's St. Pet	1	Q		
1316	Leach's St. Pet	1	Q		
1325	Leach's St. Pet	1	Q		
1341	Leach's St. Pet	2	Q		following
1348	Turtle	1			Green or loggerhead
1413					
1444	Leach's St. Pet	1	Q		school of 40 fish
1500					stop watch
1700					
1835					Resume watch
					sunset



12-16 inches  
tumbling



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Bulmer

Date 11 Feb 67  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

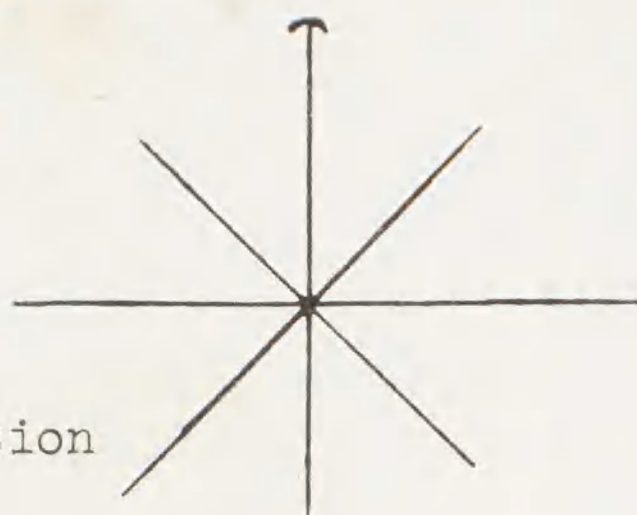
	0702				Sunrise
	0719				
	0720	P. p. auricularis	1	SW	1 Swordfish Marlin basking - dorsal fin exposed
	0724	RFB	3	NW	Ad
	0726	P. p. auricularis	2	S	
	0737	P. p. auricularis	1		
TF	0740	P. p. auricularis	5	SW	
	0742	P. p. auricularis	3		on H <sub>2</sub> O
	0743	RFB	1		on H <sub>2</sub> O Ad
	0748				Stenella sp 15±
	0804	RBTB	1		
	0808	P. p. auricularis	3		on H <sub>2</sub> O then flew S
	0816	" "	1		
	0817	DRSP	2		
	0818				
	0825	P. p. auricularis	2		
	0827	DRSP	1		
	0831	P. p. aur.	2	SE	
	0832	P. p. aur.	1		
	0834				Whale 35' fin 6" very small
	0836	P. p. aur.	3		on H <sub>2</sub> O
	0837	RFB	1		Ad
	0838				Whales 6±2 spout 8'
	0839	P. p. aur.	3		on H <sub>2</sub> O
	0844	Leach's St Pet	2		
	0848	P. p. aur.	1		
	0849	St Pet sp	2		
	0856	Leach's St Pet	1		
FF	0906	P. p. aur.	70±10		Flying in tight unescence low over the H <sub>2</sub> O and diving from flock - looks like a flock of shorebirds wheeling and turning together
		RFB	3		Scattered not a flock
	0908	P. p. aur.	30±5		1 1 1 1
		St. Pet sp	10±4		
	0928	Leach's St Pet	1		
	0937	RFB	1		on H <sub>2</sub> O
	0946	P. p. aur.	1		
	0953	P. p. aur.	1		on H <sub>2</sub> O limped away wounded "damn it"

159 OK

unshr-own Type  
Humpback?



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 11 Feb 67  
Pg. # 2

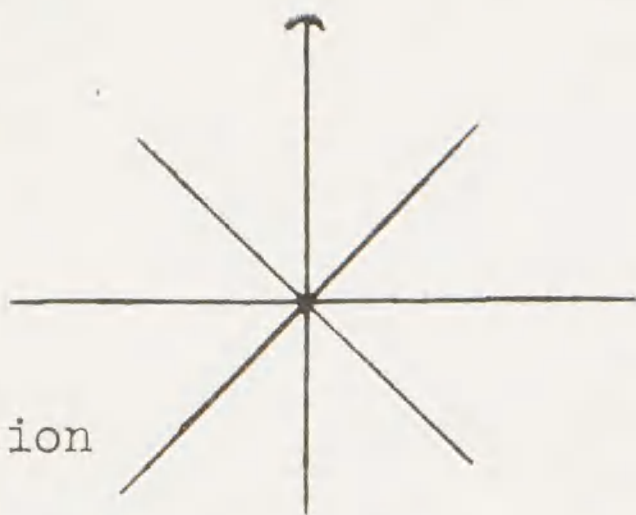
SPECIMEN  
or

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
SF	1000	P.p. aur	30±5	Q		
	1014	" "	1	Q		
	1015	" "	1	Q		
	1022	" "	1	Q		
	1040	" "	1	Q		
	1045	" "	1	Q		
	1059	" "	1	Q		
	1100					
TF	1106	" "	6	Q		Shark black 8'
TF	1117	" "	6	Q		on H <sub>2</sub> O
		RFB	1	Q		Ad light
	1120	RFB	1	Q		Imm
	1122	RFB	1	Q		
	1123	P.p. aur	3	Q		Ad light
	1125	RFB	1	Q		
TF	1130	P.p. aur	6	Q		Ad light
	1135	P.p. aur	1	Q		on H <sub>2</sub> O
	1136	RFB	4	Q		Ad light
	1141	P.p. aur	2	Q		
	1200	P.p. aur	1	Q		
	1227	" "	1	Q		
	1229	" "	1	Q		
	1230	Least St. Pet	1	Q		rounded tail - but like flight Leach's larger
	1231	Leach's St. Pet	1	Q		
	1238	Least St. Pet	2	Q		
TF	1243	ST. Pet Spe.	7	Q		Leach's size on H <sub>2</sub> O
		Least ST. Pet	1	Q		
	1245	P.p. aur	1	Q		
TF	1252	P.p. aur	6	Q		on H <sub>2</sub> O
	1254	" "	1	Q		
	1258	" "	1	Q		
	1310	" "	1	Q		
	1318	" "	1	Q		
	1323	RFB	1	SW		Ad light
	1330					6 or 7 Globicephala
	1336	Leach's St. Pet	3	Q		

OK 98



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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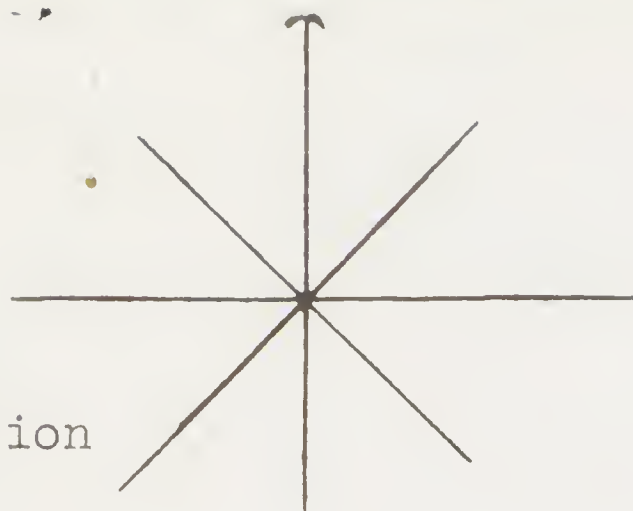
Date 11 Feb 67  
Pg. # 3

SPECIMEN  
or

	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
TF	1344	RFB	6	NW		Ad
	1346	RFB	1	@		Ad light
	1350	RFB	1	NW		Ad light
	1354	WRSP	1	@		
	<del>1400</del>					
	1420	RBTB	1	@		<del>close observ.</del>
	1500	P. aur	1	@		overship
	1531	P. aur	1	W		
	1551	Leach's St. Pet.	1	@		
TF	1602	RFB	21	N		Ad light
	1606	RFB	1	N		Ad light
	1613	P. aur	1	@		
	1614	Leach's St. Pet.	1	@		
	1615	P. p. aur	1	@		
		Leach's St. Pet.	1	@		
	1620	Leach's St. Pet.	1	@		
	1700	P. p. aur	4	N		
	1703	" "	1	N		

45 OK





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

Nocturnal

OBSERVERS:

Date 11 Feb  
Pg. #

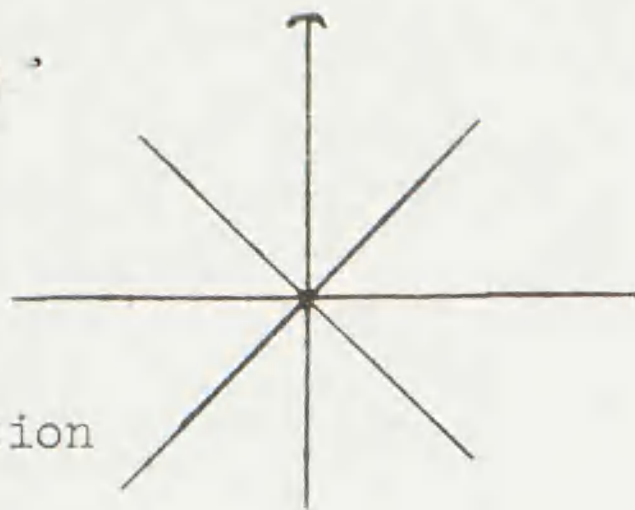
SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2000	WRSP	1			Begin Obs.
2010	WRSP	1			
2100	WRSP	1			
2145	WRSP	1			
2300	WRSP	1			
2359	WRSP	1			

SI-MNH-958-e  
 Rev. 5-66



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date  
Pg. #

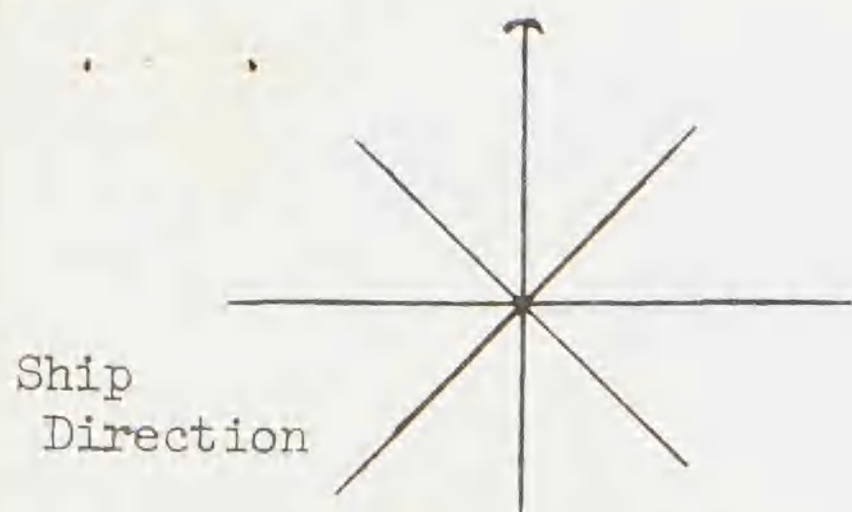
12 Feb 66

1

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0709	RTTB	1	Q		over ship SAd
0718	RFB	2	N		Ad light
0723	WRSP	1	Q		
0725	WRSP	1	Q		
0728	Least St. Pt	1	Q		
0730	WRSP	1	Q		
0750	Leach's	2	Q		
0754	Leach's	1	Q		
0755	Leach's	2	Q		
0803	Leach's	1	Q		
0809	Leach's	1	Q		
0817	Leach's	3	Q		
0821	Townsend	1	Q		
0824	Leach's	1	Q		
0826	Leach's	1	Q		
ST 0829	Leach's	6			on H <sub>2</sub> O
	Townsend	1			" "
0840	Leach's	1	Q		
0842	Leach's	4	Q		on H <sub>2</sub> O
0846	Leach's	1	Q		
0850	RTTB	2	Q		S. Ad over ship
0908	Leach's	1	Q		
0930	Leach's	4	Q		on H <sub>2</sub> O
0940	Leach's	3	Q		on H <sub>2</sub> O
0946	Leach's	4	Q		" "
0952	Leach's	3	Q		" "
0954	RFB	1	N		Ad light
1004	WRSP	1	Q		
1017	Leach's	2	Q		
	WRSP	2	Q		
1025	WRSP	4	Q		
1028	WRSP	2	Q		
1035	Leach's	2	Q		
1038	Townsend	1	Q		
FF 1044	Sooty Tern	15	Q		
	Townsend	20			feeding over school of fish - 8" jumping





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 12 Feb 67  
Pg. # 2

SPECIMEN  
or

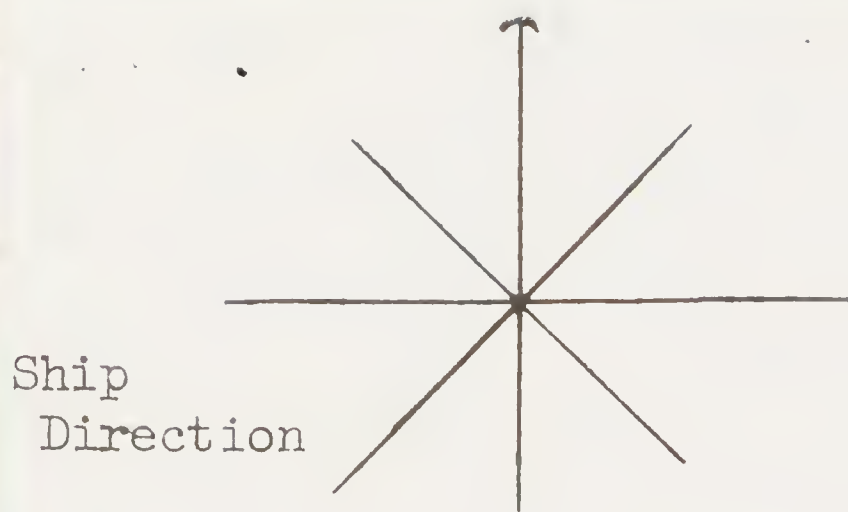
	TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
SF	1047	Leach's	4	a		2d 2L.
		Least	1	a		
	1052	Leach's	2	a		dark
	1058	Townsend Shear	1	a		
	1106	WRSP	1	a		
	1108	RFB	1	a		over ship
	1116	Leach's	3	a		
	1118	BFB	1	a		Ad
		RFB	1	a		Ad light
	1122	WRSP	1	a		
	1124	RFB	1	a		Ad light
	1208	WRSP	1	a		
	1620	Frigate sp	1	a		13 - 1600 No observ.
	1621	BFB	1	a		imm following
FF	1630	Sooty Tern	250	a		
		Townsend Shear	300	a		1 imm
		Frigate	12	a		3 Ad
		<del>Sooty Shear</del>	<del>3</del>			
		Pomarine Jaeger	2			Ad light + imm
		Parasitic Jaeger	6			
		B Foot Booby	4			
		RFB	150			Ad
		BFB	25			imm
		<del>WRSP</del>	<del>9</del>			
		Kermadec	1			dark
	1718	Sooty Tern	2	E		Ad
	1720	WRSP	1	a		
BF	1724	WRSP	23	a		on H <sub>2</sub> O
	1727	<del>Leach's</del>	3	a		
	1733	WRSP	4	a		
	1735	WRSP	2	a		
	1740	Leach's	3	a		
	1741	Townsend Shear	3	a		
	1744	RFB	1	a		over ship
	1751	Leach's	2	a		
	1756	"	3	a		
	1757	Townsend Shear	2	a		

over small mackerel type fish with yellow fin tuna and about 60 porpoise

828

OK





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 12 Feb  
Pg.# 3

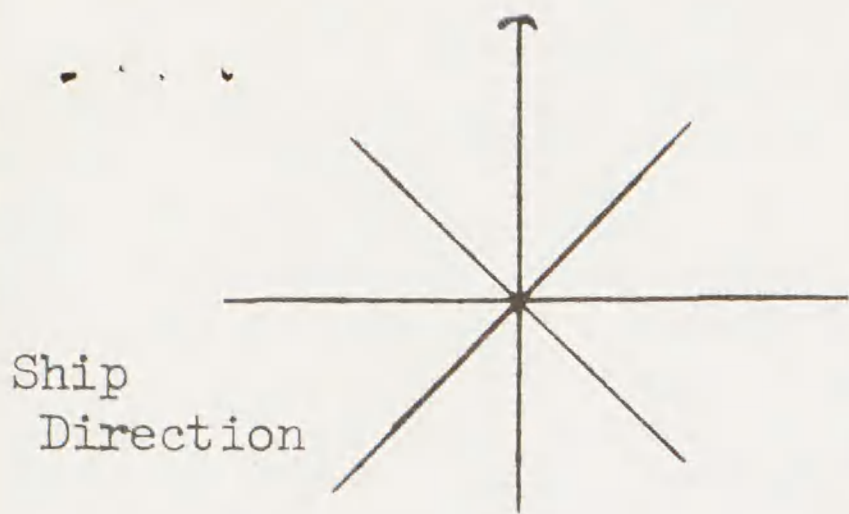
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

	1800				change course
	1808	Leach's	1	a	
	1811	WRSP	3	a	
	1812	RFB	1		SAd following school flying fish
	1815	RFB	1	a	4d light following " " "
SF	1822	Leach's	8	a	on H <sub>2</sub> O
	1823	Leach's	1	a	
	1825	Townsend Shear	2	a	

728  
17  
405





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN  
or

Nocturnal  
Drift

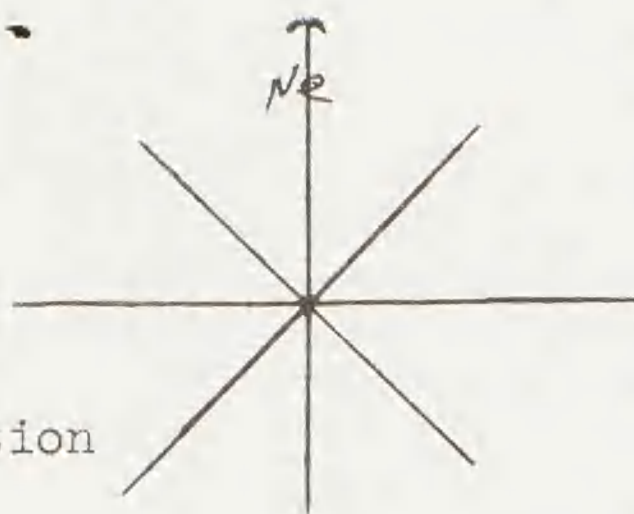
OBSERVERS:

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Date 12 Feb 69  
Pg.# 1

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
2000					begin
2012	Leach's	2			
C 2024	Leach's	4			1 flew aboard coll. ♂ molt
2029	Leach's	1			Leach's ♀ molt
2047	Townsend	1			
2118	Leach's	1			
2125	Leach's	1			
2140	Leach's	1			
2207	Leach's	1			
2231	Townsend	1			
2247	Leach's	1			
2249	Leach's	1			
2333	Townsend	1			
2349	Sooty Tern	1			
2356	Leach's	1			
2400					close





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 13 Feb 67  
Pg. # 1

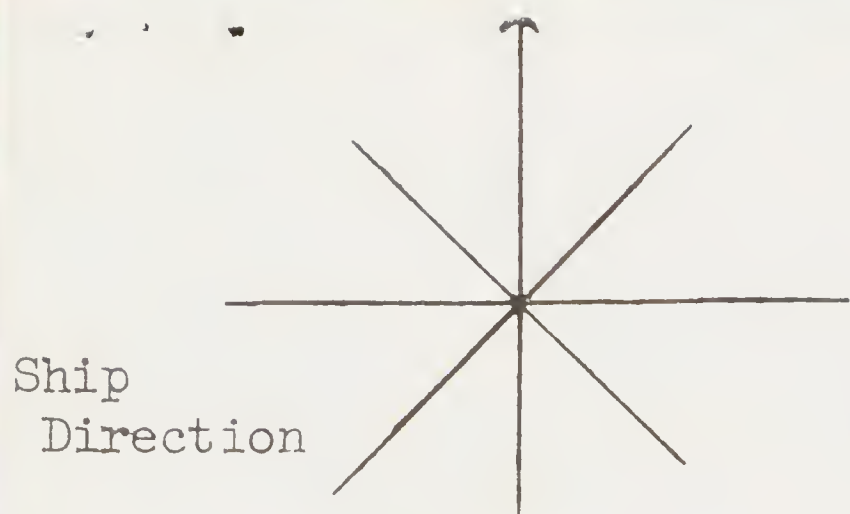
SPECIMEN

or

TIME SPECIES # DIR. BAND NO. REMARKS

0915					begin	Rain Gage 1.5
0918	Kermadec	1	N		light	
0922	WRSP	1	a			
0928	Shear. Pet	1	a		large probably <u>P. creatopus</u>	
0944	Townsend shear	1	ee			
0945	WRSP	1	ee			
1020	WRSP	1	ee			
1022	B B	1	ee		S. Ad	
1047	Shear. Pet	1	a			
1052	Townsend Shear	3	NW			
1055	" "	1	NW			
1101	" "	1	NW			
1130						
1420					Start underway	
1421	BFB	1	a		S. Ad	
1431	Leach's St. Pet	1	a			
1455	WRSP	1	a			
1510	RFB	2	NW		Ad light	
1514	WRSP	1	a			
1516	Townsend	1	a			
1520	Leach's	1	a			
1522	RFB	1	E		S. Ad	
1523	Leach's	3	a		on H <sub>2</sub> O	
1527	RFB	3	E		Ad light	
1528						
1536	WRSP	1	N		reddish brown mass in NW 40' x 5'	
1542	WRSP	1	a			
1545	Townsend S.	1	a			
1602	WRSP	1	a			
1610	<del>Pterodroma</del> Kermadec	1	a		Pip/Tah. shape color + pattern except under wing	
1621	WRSP	1	a		all dark with 2 or 3 light	
1630	WRSP	1	a		007	
SF 1702	Leach's Ashy	4	a		on H <sub>2</sub> O Ashy smaller batter flight and light undulating	area from light edged feathers
1712	Townsend	2	a		S. Ad dark Leach's	
1715	WRSP	1	a			
1716	<del>Pterodroma</del>	1	a		light	





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 13 Feb 67  
Pg. # 2

SPECIMEN  
or

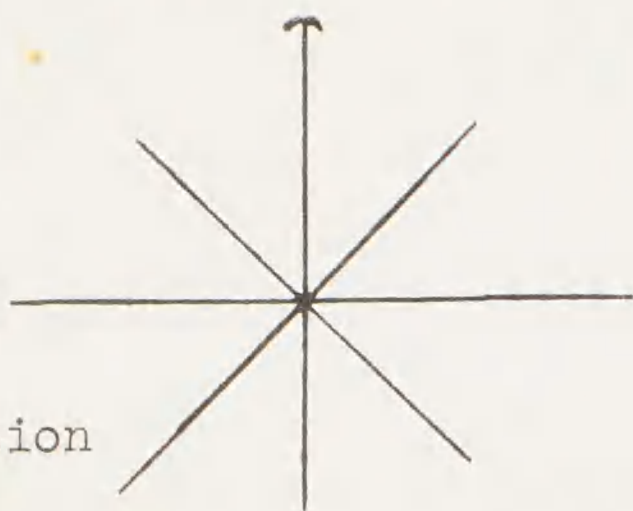
TIME SPECIES # DIR. BAND NO. REMARKS

1725	Leach's	1	Q		
1732	WRSP	1	Q		
1741	Leach's	2	Q		
1746	Townsend	2	N		
1747	"	1	N		
1748	"	1	N		
1749	Leach's	1	Q		
1752	Leach's	2	Q		
1757	Leach's	1	Q		
1759	Leach's	2	Q		
1819	DRSP	1	Q		
1824	BFB	1	Q		
1825					

ashy?  
imm  
Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 14 Feb 67  
Pg. # 1

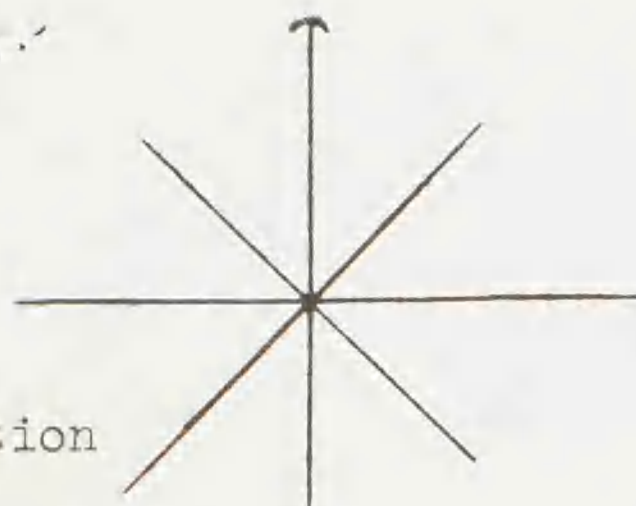
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0715					begin observ
0746	N. Phalarope	1	W		
0852	RFB	1	@		imm
0949	Leach's	1	@		dark
1046	Townsend	2	@		
1100					stop
1400					under way
1426	Townsend	2	N		
1535	Townsend	1	N		
1538	RFB	1	@		imm over ship
1602	Leach's	1	@		
	Least	1	@		
1612	Townsend	1	@		
1710	Sooty Tern	2	SE		Ad
1750	M. Frigate	1	@		Ad ♂
1752	BFB	2	@		imm
1759	RFB	2	@		imm
1818					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

R/V Jordan

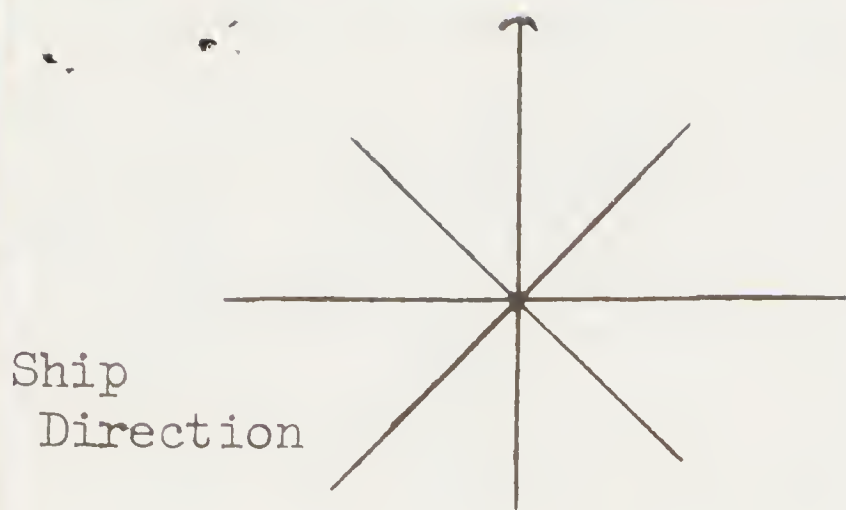
Date 15 February 1967  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0715	RFB	1	@		on ship S. Ad imm
0720					underway
0727	Leach's	1	@		on H <sub>2</sub> O
0814	Townsend	1	N		
0830	Townsend	1	N		
	RFB	1	N		imm - chasing the shearwater
0838	Leach's	1	@		
0843	RBTB	2	@		on H <sub>2</sub> O
0848	Townsend's	1	@		
0852	Townsend's	2	NE		
0923	Sooty Tern	3	NW		Ad
0959	RBTB	1	@		
10040	Sooty Tern	1	N		Ad
10045	" "	2	N		Ad
10054	BFB	1	@		imm
1058	Sooty Tern	1	@		
1100					stop
1140	B.B.	1	@		S. Ad
1315	Sooty Tern	4	N		Ad
FF 1354	" "	75			feeding over fish
	BFB	1			imm
1415					underway
1431	Sooty Tern	2	N		Ad
1435	Sooty Tern	3	N		Ad
	Townsend	1	N		
1444	Sooty Tern	2	SE		Ad
1445	Townsend	1	N		
1510	Sooty Tern	2	S		Ad
1511	Sooty Tern	2	S		Ad
1514	Pom Jaeger	1	S		Ad light
1527	Sooty Tern	2	S		Ad
1528					Sail fish 6' jumped
1550	RFB	2	@		imm + S. Ad
	B.B.	1	@		S. Ad
1622	Sooty Tern	2	@		Ad
1623	RFB	1	@		
1629	Sooty Tern	2	NE		imm joined other three on TV. antenna
1632	Sooty Tern	4	N		Ad





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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Date 18 Feb 67  
Pg.# 2

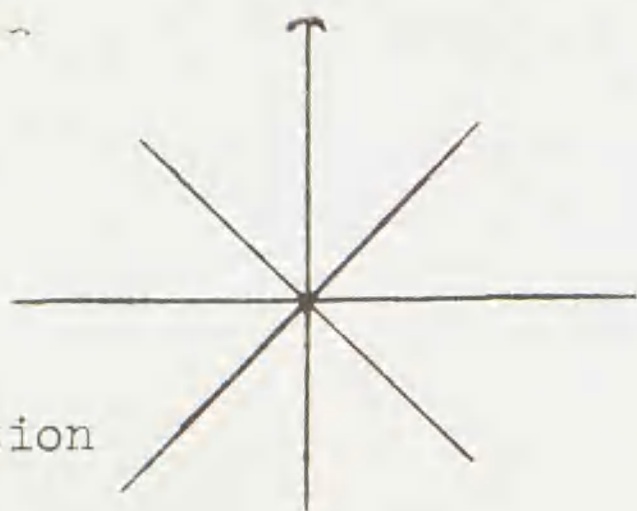
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

1705	Sooty Tern	2	N		Ad
1706	Sooty Tern	3	S		Ad



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 16 Feb 67  
Pg. # 1

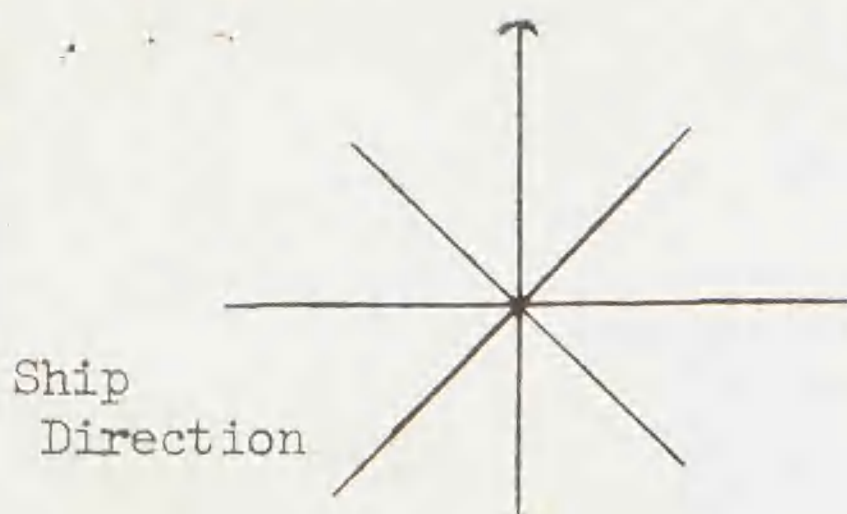
SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0715					begin
0720	BFB	1	Q		S Ad
0743	BB	4	NE		Ad <u>brewsteri</u>
0745	BB	3	NE		Ad "
0747	RFB	1	Q		imm mascot
0751	M. Frigate	3	Q		1 Ad 1 imm <u>auduboni</u>
0754	Booby sp	1	NE		
0827	Phalarope sp	1	Q		
0830	Jaeger sp	1	Q		
TF 0935	Phalarope sp	7	Q		
0937	" "	1	Q		on H <sub>2</sub> O
FF 0938	Red Phalarope	5	Q		
0942	BB	2	SW		1 Ad 1 S. Ad
0943	R. Phalarope	1	Q		on H <sub>2</sub> O
0951	R. Phal.	1	Q		" "
1000	BB	1	Q		Ad ♂ on H <sub>2</sub> O
1002	Leach's	1	Q		
1008	Leach's	1	Q		
1023	RBTB	1	SW		flying high and straight out to sea
1031	BB	1	S		Ad
1038	WRSP	1	Q		
1039	BB	4	SW		2 ♂, 2 ♀ Ad
1046	R. Phalar.	1	Q		on H <sub>2</sub> O near small piece of wood
1050	Pav. Jaeger	1	SW		Ad light
1430					stop
1501	BB	1	NE		GO
1509	BB	4	NE		Ad
1520					Ad
FF 1522	Sooty Tern	7	N		sperm whale 45-50'
1524	BB	1	N		Ad leaving whale after it dove
1545	BB	1	N		Ad
1547	R. Phalarope	1	Q		on H <sub>2</sub> O
1552	R. Phalarope	1	Q		" "
1608	BB	2	E		Ad
1610	R. Phalarope	1	Q		on H <sub>2</sub> O
1614	R. Phalarope	4	Q		on H <sub>2</sub> O
1616	R. Phalarope	1	Q		on H <sub>2</sub> O
1618	R. Phalarope	1	Q		on H <sub>2</sub> O

166  
53  
219

69  
152  
221





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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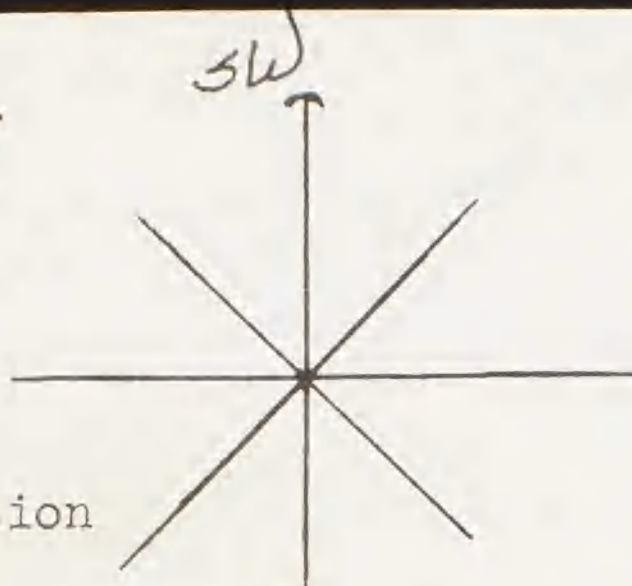
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Date Feb 16 67  
Pg. # 2

		SPECIMEN or			
TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1620					3 Manta Rays 1 wing spread
1622	BB	2	NE		Ad
1623	Phalarope sp	1	a		
1624	Phalarope sp	1	a		on H <sub>2</sub> O
1625	Red Phal.	1	a		on H <sub>2</sub> O
1629	R. Phalarope	3	a		"
1700	Sooty Tern	2	s		Ad
1702	R. Phal.	1	a		on H <sub>2</sub> O
FF 1710	Sooty Tern	35			Ad
	BB	8			Ad
	Phalarope sp	12			
	RBTB	4			
	Townsend	1			
1720	Pom. Jaeger	1	a		Ad light
TF 1722	BB	5	NE		Ad
1723	Haw Noddy	1	a		
1735	BB	2	NE		1 Ad 1 S Ad
1736	R. Phal.	2	a		on H <sub>2</sub> O
1737	R. Phal	2	NE		
FF 1745	Sooty Tern	42	a		
	BB	1	a		
1746	R. Phal	3	a		calling
TF 1750	BB	9	NE		Ad
1754	Least St. Pet	1	N		
FF 1755	Sooty Tern	10			
	Townsend	2			
1756	BB	1	a		Ad on log
1756	R. Phal.	2	a		calling
1802					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

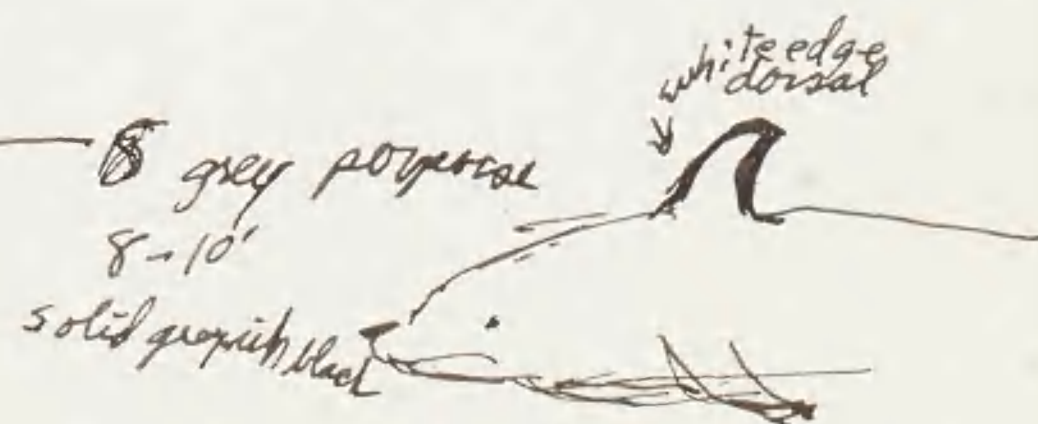
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Date 20 Feb 1967  
Pg.# 1

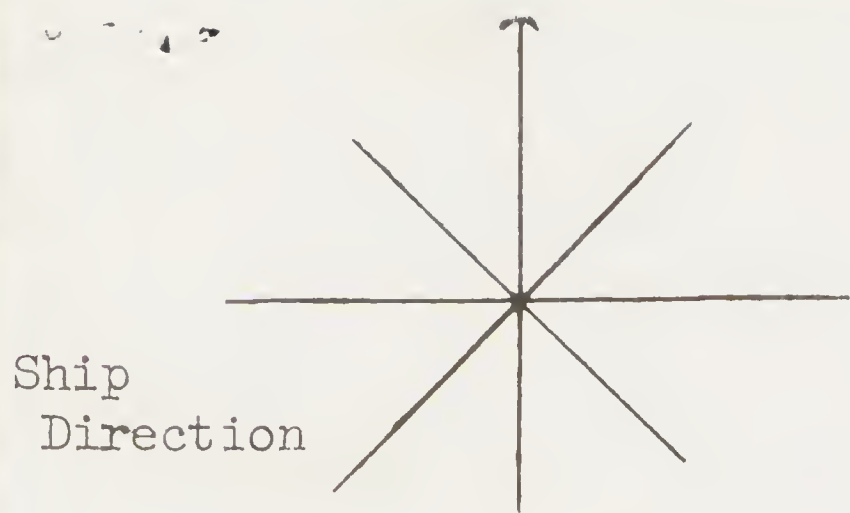
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700					begin
0706	BFB	1	Q		S. Ad
0709	BB	1	SE		S. Ad
0720	BB	3	SW		Ad
0807	BB	1	W		Ad
0814	RBTB	1	Q		on H <sub>2</sub> O
0828	Jaeger sp	1	Q		light Par. or Pom
0830	RBTB	2	Q		
0838	BFB	1	Q		S. ad.
0841	WRSP	2	Q		
0847	WRSP	1	Q		Swimming
0902	RBTB	1	Q		Red crab 1"
0922	RFB	2	Q		imm following
	Pom. Jaeg.	1	Q		Ad. light "
0931	RFB	1	Q		imm following
0942	WRSP	1	Q		
0947	BB	1	W		Ad
1000	Phalaropus	4	Q		in strong band of calm H <sub>2</sub> O
1004	BB	1	W		Ad
1026	RFB	1	Q		imm following
1100	RBTB	1	Q		over ship
1102	WRSP	1	Q		Stop
1115	RBTB	1	Q		on H <sub>2</sub> O
1235	RFB	8	Q		Go
1415					
1427	Leach's sp.	5	Q		on H <sub>2</sub> O
1429	BFB	1	Q		imm
1432	BB	1	Q		Ad on log
1437	RFB	3	S		imm dark
1440	RBTB	1	Q		
1441	RFB	1	Q		imm
1508	RFB	1			imm
	WRSP	1			
1514	Wedgetail	1	NW		light
1522	RFB	1	NW		imm
1524	WRSP	3	Q		on H <sub>2</sub> O
1535	BFB	1	Q		imm
1600	WRSP	2	Q		







Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

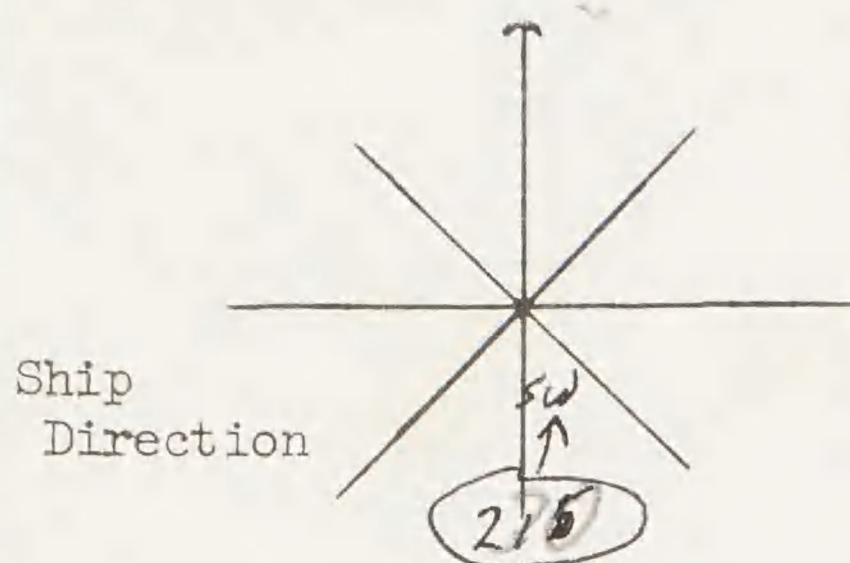
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Date 20 Feb 67  
Pg. # \_\_\_\_\_

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1700	RFB	3	Q		1 min
1704	Townsend	1	Q		
1705					Turtle
1707	RBTB	1	Q		
1718	WRSP	1	Q		
1725	Sooty Sp	1	Q		
1738	Townsend	1	Q		
1745	Wedgetail	1	Q		light
1755					Sunset





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 21 Feb 67  
Pg. # 1

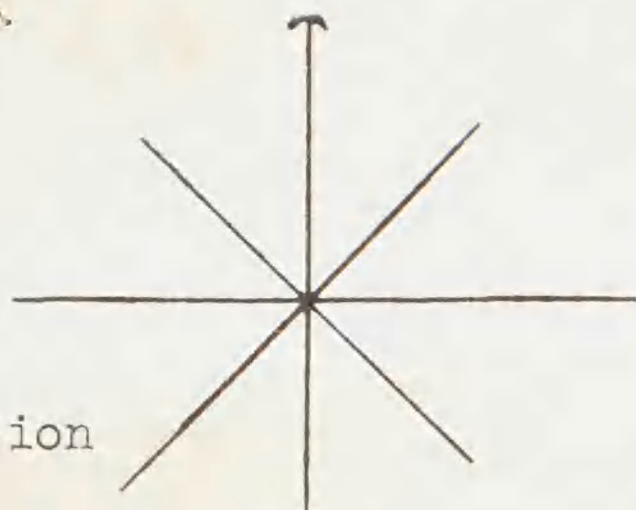
SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0630					begin
0655	RFB	1	NE		imm
0657	Wedgetail	1	Q		light
0700	R. Phalarope	1	W		
0754	WRSP	1	Q		
0841	WRSP	1	Q		
0942	WRSP	1	Q		
0945	RFB	1	Q		imm
1000					Stop
1310					GO
1539	WRSP	3	Q		
1552	WRSP	4	Q		on H <sub>2</sub> O
1607	RBTB	1	Q		
1610					School of clupeids 6" about 40
1616	B Foot Rooby	1	NW		
1625	R. Phalarope	2	Q		on H <sub>2</sub> O calling
1702	RBTB	1	Q		over ship
1711	Rooby sp.	1	?		
1735	Wedgetail	1	E		light
	Townsend	1	E		together
1744	Wedgetail	1	Q		light
1804					Sunset



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 22 Feb 67  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

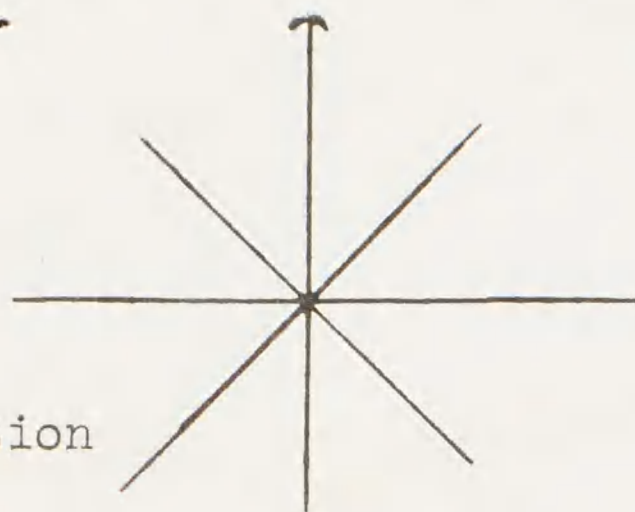
	0700				begin
	0725	Pom. Jaeger	1	Q	light Ad
		WRSP	4		Juvs are into the flock of storm petrels and chased and caught one. It ate the bird on the H <sub>2</sub> O
	0745	Frigate sp	1	Q	then proceeded S
	0746	Leach's	2	Q	imm over ship
	0755	Wedgetail	1	Q	on H <sub>2</sub> O
	0800	Wedgetail	1	Q	dark
	0808	Leach's	1	Q	dark
	0817	shear. Pet	1	Q	
	0818	Leach's	2	NW	light below Pterodroma? to far out
	0819	Wedgetail	1	Q	
	0823	Leach's	1	Q	light
	0826	Frigate Sp	1	Q	
Tr	0837	WRSP	1	Q	imm ♀
	0842	WRSP	6	Q	
	0848	Leach's	1	Q	on H <sub>2</sub> O
	0849	Leach's	3	Q	on H <sub>2</sub> O
	0851	Leach's	1	Q	on H <sub>2</sub> O
	0852	<del>Leach's</del>	2	Q	Coconut with school of small fish and small shark 2 1/2'
	0855	wedgetail	1	NW	light
	0856	WRSP	2	Q	on H <sub>2</sub> O
	0858	Leach's	3	Q	" "
	0904	WRSP	3	Q	
F	0907	Leach's	11	Q	on H <sub>2</sub> O
	0909	Wedgetail	1	NW	light
	0910	WRSP	4	Q	
	0912	WRSP	4	Q	
	0915	Leach's	1	Q	
	0925	Frigate sp	1	Q	imm circling
	0940	Wedgetail	1	Q	light on H <sub>2</sub> O
	1000	Wedgetail	1	Q	" "
FF	1025	Sooty Tern	75	Q	1 Ad
	1026	Wedgetail	22	Q	8 dark } over fish 10" long, jumping
	1034	WRSP	1	Q	5 Ad
	1036	Wedgetail	2	Q	
	1045		1	Q	light
	1335				stop 90

WTS-30 Leach's -26  
SP-2 PT-1  
ST-75 WSR-26  
BFB-1 Pig-3

177



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

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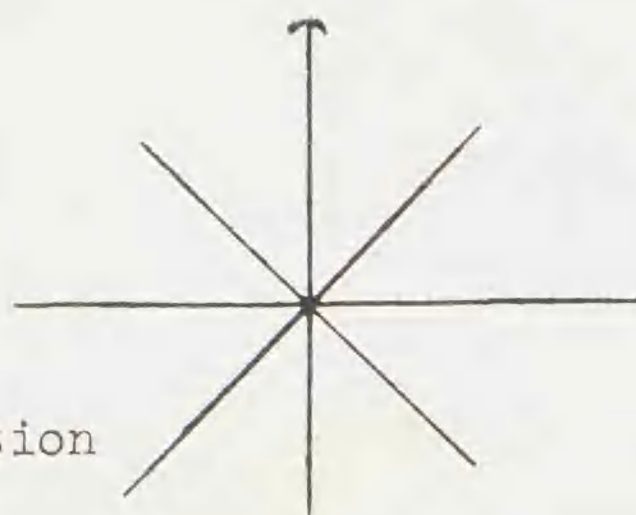
Date 22 Feb 67  
Pg. # 2

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1349	Leach's	1	a		
1403	Leach's JFP	1	a		
1422	<del>Leach's</del>	1	a		good look 005 JFP
1436	Leach's	2	a		
1449	Leach's	1	a		
1450	Wedgetail	1	a		
1502	WRSP	3	a		light
1507	RTTB	1	a		on H <sub>2</sub> O
1553	WRSP	1	a		over ship S. Ad
1625	Booby Sp	1	a		
1811			a		Sunset
					P L 10 21



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

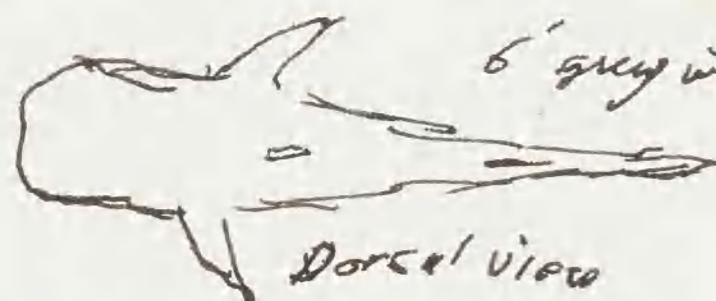
OBSERVERS:

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Date 23 Feb 67  
Pg.# 1

SPECIMEN  
or

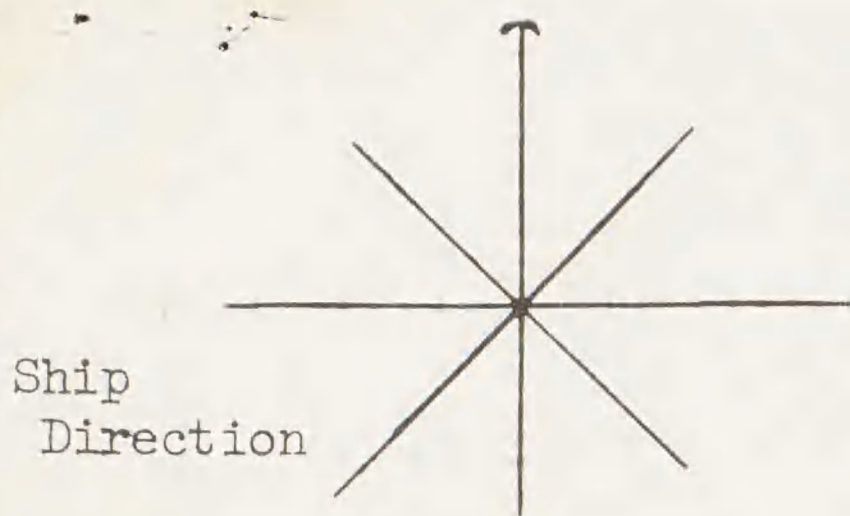
TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0630					begin
0656	Wedgetail	1	Q		dark
0714	Wedgetail	1	a		light
0720	wedgetail	1	w		light
0735	Wedgetail	1	a		light
0802	Wedgetail	1			
0807	Leach's	1	SW		light
0816	Sooty Tern	1	Q		
0847	L.T. Jaeger	1	S		Ad
0918	Leach's	1	Q		imm
0924	Wedgetail	1	Q		
0929	R. Phalarope	1	Q		light
1028	Leach's	3	Q		on H <sub>2</sub> O, calling
1100		1	Q		
1430					Stop
1448	Wedgetail	1	Q		Go
1456					light
1504	Leach's	2			Shark
1541	WRSP	2	Q		
1558	Leach's	12	Q		on H <sub>2</sub> O
1606	Tern Sp	1	N		
1624	Leach's	2	a		
1636	Leach's	3	Q		1.
1706					
1716	Leach's	1	Q		Dolphin jumping 5'
1721	Leach's	1	Q		
1722	Wedgetail	1	a		light
1739	WRSP	1	e		
1812					Sunset



6' grey with white spots  
small whale shark?

28<sup>th</sup>  
1441 41.000  
292  
1220  
1152  
180  
520  
1600





SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 24 Feb 1967  
Pg. # 1

TIME	SPECIES	#	DIR.	SPECIMEN or BAND NO.	REMARKS
0700					begin
0711	Par. Tanager	1	a		Ad dark
0944	WRSP	1	e		
0945					Hammerhead 5'
1010	WRSP	1	a		
1030	WRSP	1	a		
1300					Stop
1316	Wedgetail	1	a		Go dark
1343	WRSP	1	a		
1345	Leach's	1	a		
1347	Leach's	3	a		
1359	Leach's	4	a		
1417	WRSP	1	a		
1440	JFP	1	a		on H <sub>2</sub> O
1446	WRSP	1	a		
1452	Leach's	1	a		
1455	Phalarope sp.	1	a		
1518	Wedgetail	1	a		dark
1519	Wedgetail	1	a		light 2nd 2
1524	Wedgetail	1	a		light
1539	Wedgetail	1	a		light
1538	Leach's	1	a		light
1558	Wedgetail	1	a		
1806	Leach's	1	a		light
1810	Leach's	1	a		
1813		1	a		Sunset

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OBSERVERS:

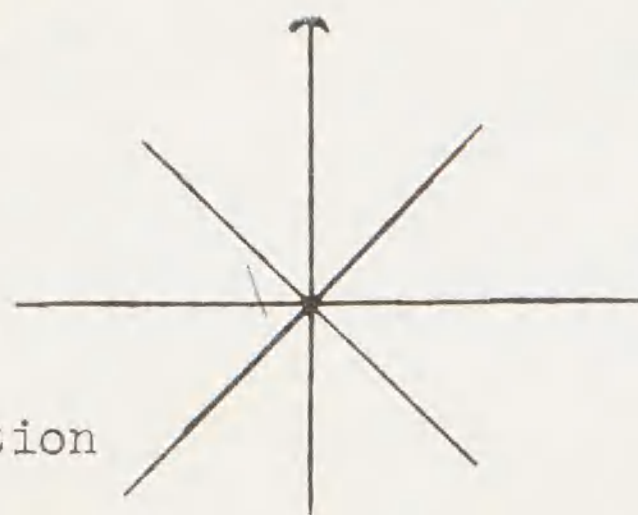
Date 24 Feb  
Pg. #       

Nocturnal

SI-MNH-958-e  
Rev. 5-66



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

Date 25 Feb  
Pg. # 1

SPECIMEN  
or

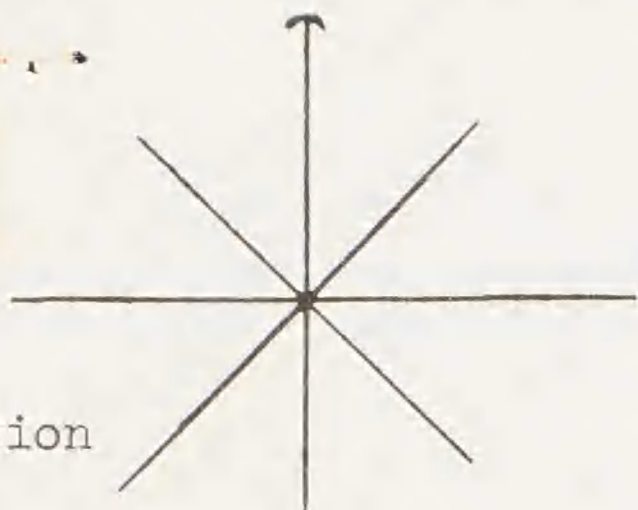
TIME SPECIES # DIR. BAND NO. REMARKS

0720					Start
0721	Frigate sp	1	a		Ad ♂
0735	Leach's	1	a		
IF 0758	Sooty Tern	23	a		Ad over clouds 6'
0800	Leach's	1	a		
0811	WRSP	1	a		
0818	Leach's	1	a		
0828	Wedgetail	1	a		on H <sub>2</sub> O
0845		1	a		dark
0902	Leach's	1	a		Shark 6'
0916	Leach's	2	a		on H <sub>2</sub> O
0934	Leach's	1	a		on H <sub>2</sub> O
0939	Leach's	1	a		"
1015		1	a		"
1030	WRSP	1	a		hammer head 7'
1400					Stop
1417					GO
1425	Leach's	1	a		hammerhead 6'
1508	R. Phalarope	1	a		
1614		1	N		
1615	Leach's	1	a		Chelonia mydas
1620	R. Phalarope	1	a		in H <sub>2</sub> O

1600 Jelly fish Scyphozoa



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date 26 Feb 67  
Pg. # 1

SPECIMEN  
or

TIME SPECIES # DIR. BAND NO. REMARKS

0700 \_\_\_\_\_ begin

0709 Leach's 1 ea

0724 Leach's 1 a

0732 Shear-Pet 1 a

0749 WRSP 1 a

0832 WRSP 1 a

0842 WRSP 1 a

0848 WRSP 1 a

0856 WRSP 1 a

0858 Leach's 1 a

0900 WRSP 2 a

0902 Leach's 1 a

0909 WRSP 1 a

0910 \_\_\_\_\_

0915 WRSP 3 ea

0922 WRSP 1 a

0938 \_\_\_\_\_ Turtle

0939 WRSP 1 a

0945 \_\_\_\_\_

0952 Leach's 2 a

1002 WRSP 3 a

1005 WRSP 3 a

1010 Leach's 1 a

1015 \_\_\_\_\_

1022 Leach's 1 a

1024 Leach's 1 a

1026 \_\_\_\_\_

1030 WRSP 1 a

1430 \_\_\_\_\_

1440 Leach's 1 a

1450 Leach's 1 a

1453 WRSP 3 a

1500 WRSP 1 a

1501 Shear-Pet 1 a

1502 WRSP 4 a

brown + white - way out

4 porpoise

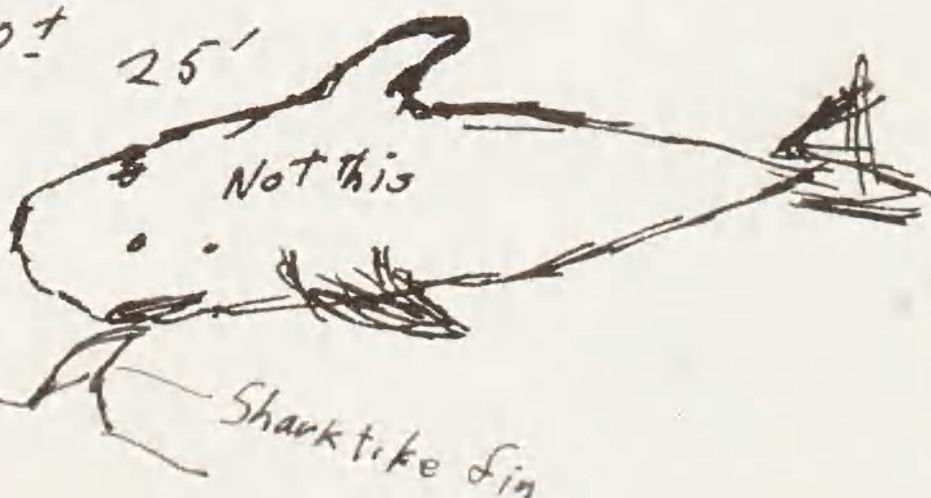
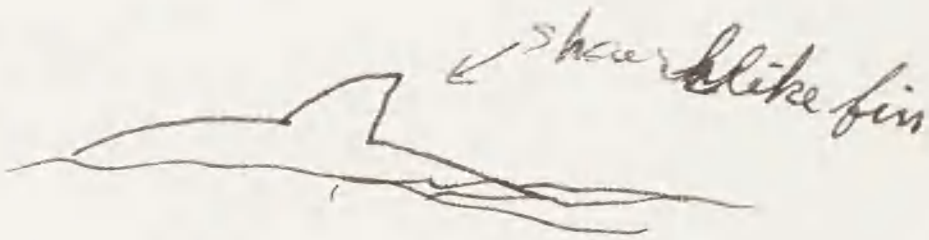
1<sup>st</sup> podlet whales - 2<sup>nd</sup> Porpoise

whales 10' - 25'

2 porpoise

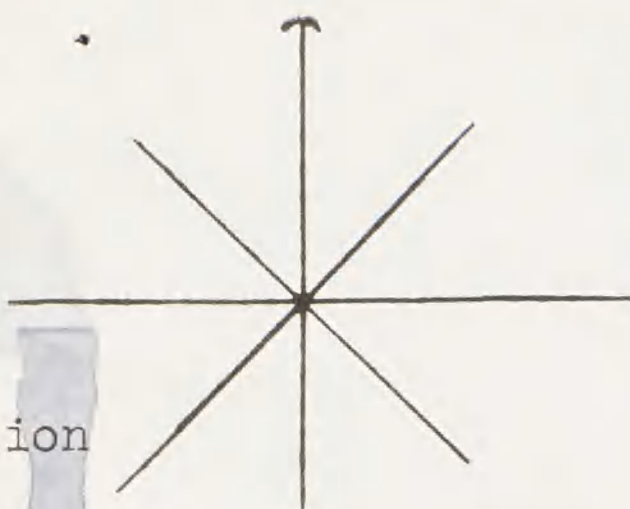
Stop

on H<sub>2</sub>O displaying





Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

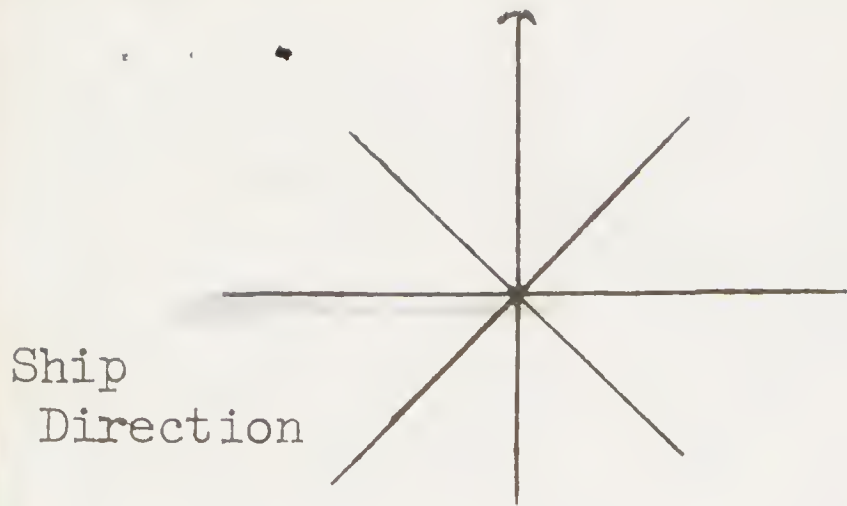
Date 26 Feb 67  
Pg. # 2

SPECIMEN  
or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
1512	WRSP	2	a		
1518					10± whales
1521	WRSP	2	a		cowlike head masopodan
1524	WRSP	1	a		
F 1526	Leach's	12	a		on H <sub>2</sub> O
1532	Leach's	3	a		
1533	Xmas Is. S	1	a		
1544	WRSP	4	a		} couldn't be anything else, but way out there?
1545	WRSP	4	a		
1550	WRSP	4	a		
1555	WRSP	4	a		} birds scattered
1559	Leach's	4	a		
1628	WRSP	3	a		on H <sub>2</sub> O
1702	WRSP	2	a		
FF 1718	WRSP	9	a		

(55)





Ship  
Direction

SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

SPECIMEN

or

Nocturnal

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date 26 Feb

Pg.# 1

TIME SPECIES # DIR. BAND NO. REMARKS

2100

begin

2110

Shear Pet

1

E

Audubons?

2200

WRSP

1

2300

WRSP

1

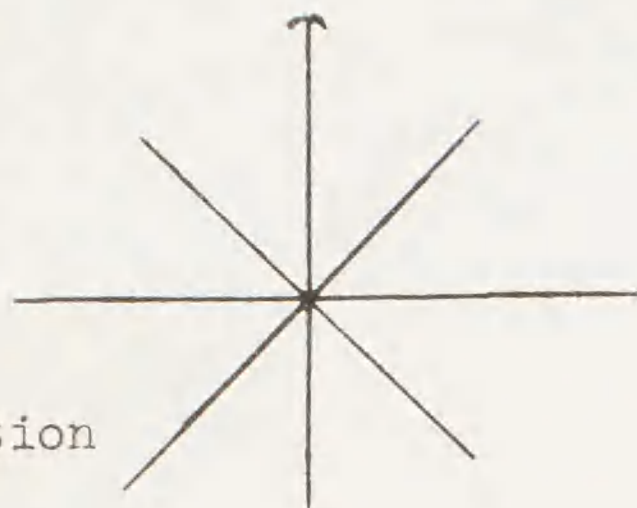
2310

WRSP

1



Ship  
Direction



SMITHSONIAN INSTITUTION  
DIVISION OF BIRDS  
AT SEA DAILY LOG - E

OBSERVERS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date 27 Feb  
Pg. # 1

SPECIMEN

or

TIME	SPECIES	#	DIR.	BAND NO.	REMARKS
0630	—				begin
0641	WRSP	1	a		Feeding
0659	WRSP	1	a		
0709	WRSP	1	a		
0711	WRSP	1	a		
0729	WRSP	1	a		
0807	Leach's	1	a		
0813	Leach's	1	a		
0822	WRSP	1	a		
0830	Leach's	3	a		Rain
0900	WRSP	4	a		
0911	WRSP	2	a		
0917	Leach's	5	a		
0932	Leach's	3	a		
0946	Phalaropes	2	a		
0952	WRSP	3	a		
1008	WRSP	1			
1015	WRSP	1			
1016	WRSP	1			
1020	WRSP	4			
1022	WRSP	4			
1034	WRSP	1			
1100	WRSP	1			
1300					Stop
1547	WRSP	15	a		
1552	WRSP	1	a		
1616	WRSP	1	a		
1618	WRSP	1	a		
1629	Leach's	1	a		
1704	WRSP	1	a		
1731	WRSP	1	a		



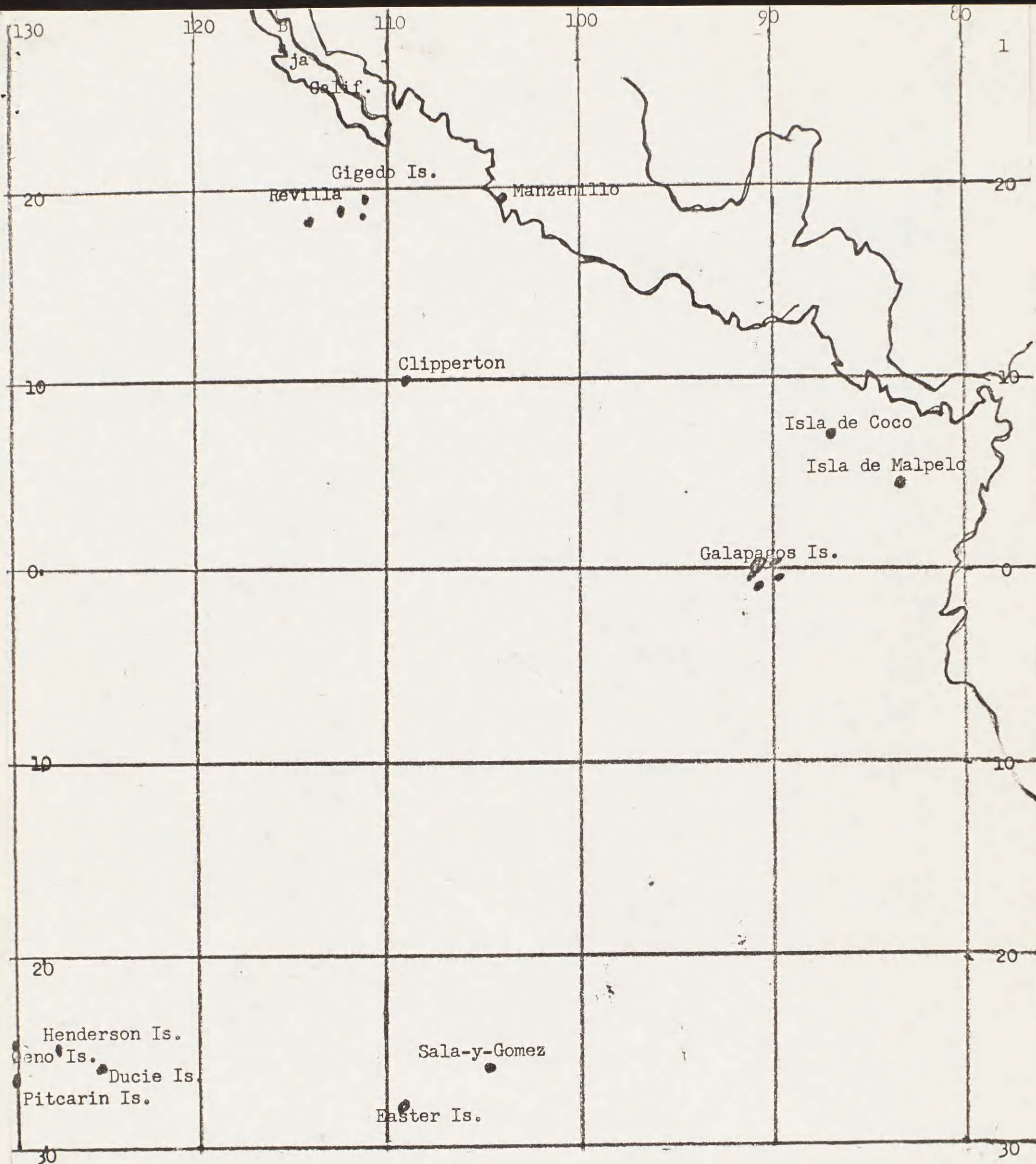
Eastern Area  
Miscellaneous Pelagic Cruise No. 9

SUMMARY OF EASTERN PACIFIC OCEAN BIRD OBSERVATIONS

February 7 to March 24, 1967  
Aboard the DAVID STARR JORDAN

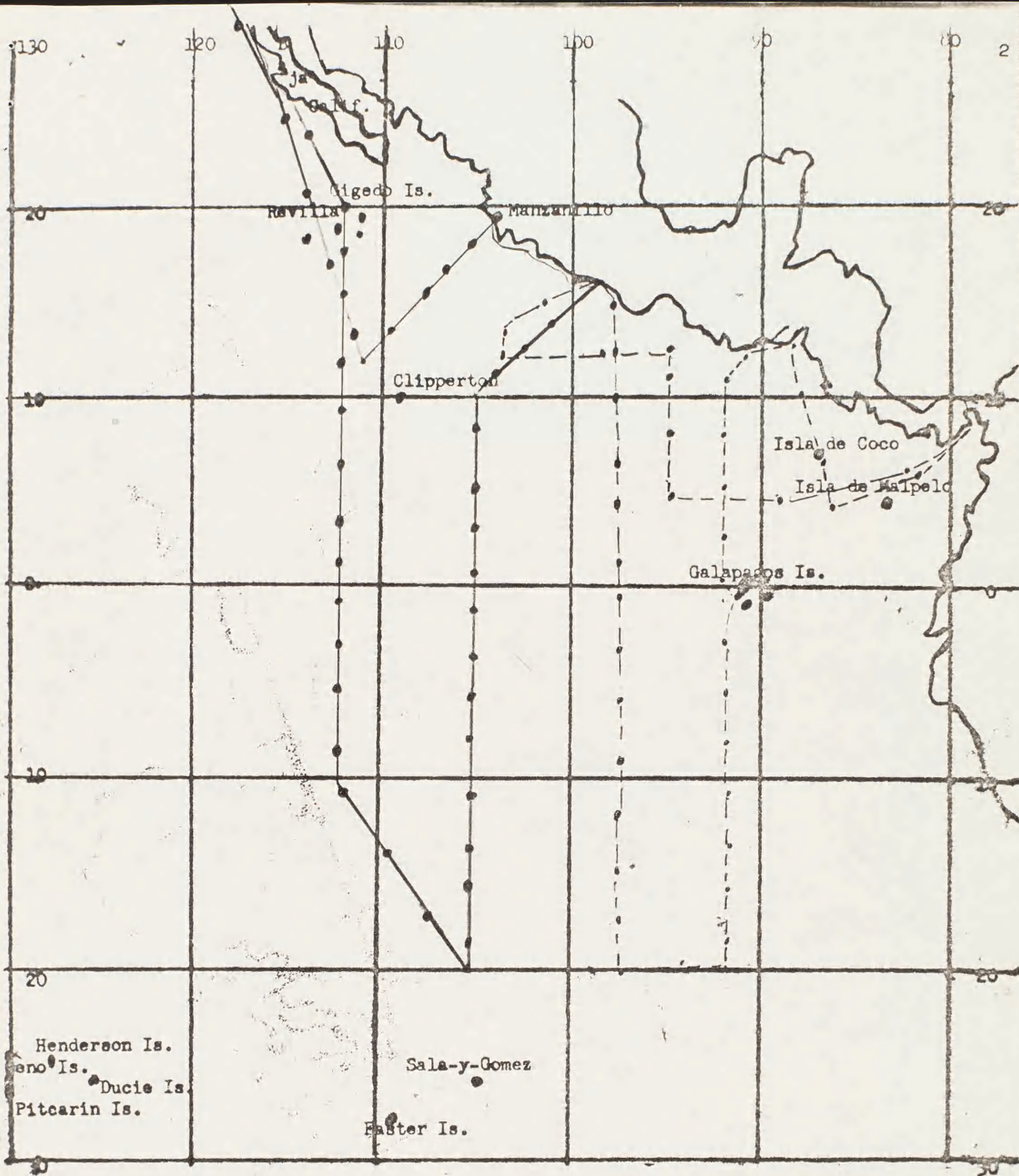
Walter Bulmer Jr.  
Pacific Program





MAP OF AREA WHERE EASTROPAC SURVEYS ON JORDAN AND ROCKAWAY OCCURRED.





CRUISE TRACKS OF JORDAN (SOLID LINE) AND ROCKAWAY (BROKEN LINE)



The David Starr Jordan departed San Diego February 7 to participate in the EASTROPAC Project. The primary objective of the trip was to survey the oceanographic environment of physical and biological relationships between the area of 20°N - 112°W and 20°S - 105°W in an attempt to find a better understanding of pelagic tuna resources.

The ship traveled from San Diego to 12°N - 111°W and then headed northeast on a direct line for Manzanilla, Mexico. On 18 February the ship departed Manzanillo and traveled along the coast of Acapulco. From Acapulco, stations were resumed on 20 February and the track ran southwest to 12°N - 105°W. The ship then proceeded south along 105°W to 20°S. From this point a northwestern course was taken without stations until 10°S - 112°W was reached. The Jordan continued along 112°W to 20°N, where the study area ended and then returned to San Diego on 24 March. Environmental data were collected at about 20 mile intervals in all areas between 20°N and 20°S except the two areas previously mentioned.

As a visiting scientist aboard the David Starr Jordan, I conducted bird, mammal, and fish observations for 43 days while the ship was at sea. Excellent cooperation was received from Dr. Longhurst, the scientific crew, Captain Foster, and the ship's crew, in all phases of observing and collecting birds throughout the trip. This preliminary report summarizes these observations.

In 40 days, a total of 308.5 hours was spent observing, while the ship traveled 3,218 miles. An additional 38 hours of nocturnal observations were recorded from various points throughout the trip. Observations were conducted on three additional days but due to the proximity to the coast only species accounts and relative abundance of species were recorded.

During diurnal observations 4,020 birds of 41 species were recorded. Nocturnally, 175 birds of 8 species were recorded. Sooty Terns (1117) were the most abundant. Leach Storm Petrels (948) and Red Phalaropes (137) were regularly seen throughout the trip. Townsend Shearwater (687), Wedge-tailed Shearwaters (291) and Red-footed Boobies (253) were present in large numbers in restricted areas. The most abundant bird throughout the trip in terms of birds per square mile was Leach Storm Petrel.

#### METHODS

Observations were conducted from sunrise to sunset throughout most of the trip. Watches were not held during the noon station which varied in length from 2 1/2 to 4 hours. Due to the difference in daily steaming time the most important figure is birds per linear mile per day and not total birds per day.



Observations were conducted from the flying bridge or the bow depending on the type of avifauna present (e.g., feeding flocks readily observed from the flying bridge, storm petrels readily identified from the bow). Observational emphasis was placed on sighting and identifying birds near the ship. As a result, more distant birds may have been often missed. For this reason the total number of categories of observation (e.g., those sightings categorized as shearwater/petrel, Pterodroma sp., and Tern sp.), are less than might be expected.

### DISCUSSION

For purposes of analysis the cruise track was divided into six sections. Each section was determined on the basis of the fauna present and in the most elementary way illustrates six different habitats encountered. It is hoped that when final breakdown of environment is available a more precise zoogeographic map of the area can be completed. A major fault with this preliminary division of the cruise track can be illustrated by area "E". This area covers roughly from 5°S to 20°S and 11 days of observations. Area "E" contains the outer edge of the Humboldt current where bird density was 1.159 birds per linear mile on the 3rd of March. But at 20°S the environment was virtually barren of life and density sank to .078 birds per linear mile.

Each area is dominated by birds from certain land masses which may be close or far distant (e.g., area "B", around the Revilla-Gigedo Islands is dominated by birds breeding on these islands; area "D" in the equatorial doldrums, where dominant birds were Leach Storm Petrels and Red Phalaropes from the Arctic). The daily analysis of each area is illustrated in Tables 4-9.

#### Area "A". 30°N to 20°N

This area is influenced by birds from adjacent Baja California, and wintering birds from higher latitudes. The dominant species group was storm petrels, with gulls second. Shearwater/petrels were represented in this area by cold-water species or sub-species from the Baja coast and the Southern Hemisphere.

Large areas of kelp and an abundance of cetaceans and pinnepeds are characteristic of this area. The average surface temperature was 10°C.

Appendix C contains a summary of observations along the Baja coast on March 23rd and 24th.

#### Area "B". 20°N-114°W to 12°N-109°W

Tropical seas surrounding the Revilla-Gigedo Islands and dominated by birds from these islands. The Townsend Shearwater, endemic to this area, was the most abundant bird species. Area "B" had the highest



all-over bird density, with large flocks of Sooty Terns and boobies feeding over tuna schools.

Shearwater/petrels were the dominant group. Wintering and resident populations of storm petrels occurred sympatrically making storm petrels the second most abundant group.

Area "C". 14°N-109°W to 3°N-105°W

This was an arbitrarily chosen area, encompassing several environments and birds of multiple origin. The northwestern track was characterized by choppy seas, with flocks of Sooty Terns of possible Tres Marias origin. The southeastern leg had very calm seas and Leach Storm Petrels were the dominant birds. The equatorial counter-current did not support the large bird populations found farther west and is evidently less distinctive at this longitude.

Sooty Terns were the most abundant species with Leach Storm Petrels, Brown Boobies, Red Phalaropes, and Wedge-tailed Shearwaters occurring in significant numbers. Most of the area was influenced by coastal species. Appendix "D" is a summary of species and populations observed along the coast from Manzanillo to Acapulco.

Area "D". 30°N 105°W-4°S 105°W and 4°S 112°W-5°N 112°W

This area is commonly referred to as the Doldrums, and has almost identical characteristics across the entire Pacific. It is characterized by very calm seas, which are rich in plankton and support large populations of cetaceans, but relatively few birds. Due to this phenomenon the "equatorial doldrums" are of special ornithological interest. Explanations for the lack of birds may be due to a lack of fish, or the lack of wind which most pelagic species appear to prefer. In any case careful analysis of environmental data should help to answer important questions on distribution and habitat of pelagic birds.

Leach Storm Petrels were by far the most abundant birds. Red Phalaropes were recorded regularly but not commonly. Other species were recorded on the fringes of the area, and were probably only passing through.

Area "E". 5°S-20°S along 105°W and 112°W

Rough seas and high winds prevailed throughout this area. Although Sooty Terns were the most abundant species present, petrels were an area indicator. Several species of Pterodroma were only encountered within this area.

Environment varied from rich zones at 10°S to virtually barren seas at 20°S. Birds were found feeding on large schools of flying fish chased



to the surface by skipjack. The heaviest concentration of birds was found on the eastern leg where perhaps some effect of the Humboldt current may have brought fish to the surface.

Area "F". 5°N-10°N along 112°W

A rich counter-current with moderate winds, choppy seas, and rain squalls characterized this area. Large flocks of Sooty Terns and Wedge-tailed Shearwaters with assorted Pterodroma made this area quite interesting ornithologically. Plankton counts were higher in the North Equatorial Current, and yet bird populations were always found in the narrow counter-current. Complete analysis of environmental data from EASTROPAC cruises will aid in answering important questions of zoogeographical distribution and niches of species native to the Equatorial Countercurrent.



BIRDS

SPECIES ACCOUNTS

Black-footed Albat  
(Diomedea nigripes)

One Black-foot as observed on the first day out of San Diego.

Pale-footed Shearwater  
(Puffinus carneipes)

One Pale-foot observed at 14°S.

Wedge-tailed Shearwater  
(Puffinus pacificus)

Wedge-tails were very abundant in the equatorial counter current along 10°N. The main population (240) was observed west of Clipperton Island. The color-phase ratio was 83% light to 17% dark.

In view of the lack of Wedge-tails around the Revilla-Gigedo Islands, it seems logical to conclude that the birds found at 10°N constitute the main wintering population from these islands. It is not entirely impossible for Hawaiian Wedge-tails to be present in small numbers since Wedge-tails appear constant across this counter current area to the west.

Two males were collected. One was molting and had small gonads. The second male was in fresh plumage and the gonads had begun to increase in size.

Slender-billed Shearwater  
(Puffinus tenuirostris)

Two separate sightings of this species at 13° and 16°S. Both birds passed close enough for positive identification, and both were heading northwest. This species and the Pale-foot are presumably non-breeders, or birds that have departed from their nesting home early due to nest failure. Another possibility is that these Slender-bills may be from the small Easter Island population which may have completed nesting.

Christmas Shearwater  
(Puffinus nativitatus)

The single sighting of this species along the equator at 105°W. was quite unexpected. Until more is known about its pelagic range, the Christmas Shearwater must be considered a straggler this far east.



Townsend Shearwater  
(Puffinus puffinus auricularis)

A very abundant shearwater in the seas around the Revilla-Gigedo Islands. In March they were found farther north than in February, but this form probably has a limited pelagic range.

Black-vented Shearwater  
(Puffinus puffinus opisthomelas)

This sub-species inhabits the cold California current, breeding on islands along the Baja Coast. It is readily identified from the predeeding form by its larger size, brownish back and dark flanks.

Dark-rumped Petrel  
(Pterodroma phaeopygia)

Dark-rumps were found regularly in the equatorial counter current at 112°W. These birds appeared rich brown dorsally, differing from the single sighting along the equator which was sooty black above. It is remotely possible that the northern population is P. p. sandwichensis from Hawaii. The southern bird was almost definitely P. p. phaeopygia from the Galapagos.

Juan Fernandez Petrel  
(Pterodroma externa externa)

The scarcity of Juan Fernandez Petrels sightings along the rich counter currents is indicative of birds remaining on their non-breeding grounds during the breeding season. Most Juans appeared in bad molt with occasional individuals showing large white patches on the dorsal surface of their wings. These white patches were so pronounced that they gave me a first impression of being Daption. Mr. Heiden also observed this phenomenon on the Rockaway cruise.

Tahiti Petrel  
(Pterodroma rostrata)

Although this species is very difficult to separate from Phoenix Petrels, both individuals observed this trip came close enough to be positively identified. Factors making identification possible were: large size, worn light brown plumage, and massive bill-small head appearance. I believe that I saw a couple during nocturnal observations but listed them as Pterodroma sp.



Black-winged Petrel  
(Pterodroma hypoleuca)

Black-wings were recorded regularly in the southern hemisphere. These birds probably represent individuals that have finished their breeding cycle early, or have had nest failures.

Kermadec Petrel  
(Pterodroma neglecta)

Kermadec Petrels were recorded further north than any other tropical species of Pterodroma. Sightings were usually of single birds and were distributed over four areas. Color-phases recorded are: 1 dark, 6 light with chest bands in the northern hemisphere, 3 light without chest bands in the southern hemisphere. The remaining 4 birds are a result of an estimate on a feeding flock of Pterodroma.

Murphy Petrel  
(Pterodroma ultima)

This species was recorded with some regularity between 10°S and 15°S. Its uniform light brown pattern, typical Pterodroma shape and flight, readily identify it once other dark shearwater/petrels are known. In size it appears between the Kermadec Petrel and the Juan Fernandez Petrels although the physiognomy resembles P. externa.

Cook Petrel  
(Pterodroma cookii)

This cold water species of Pterodroma was found most abundantly along the convergent zone of the California current and the warm water mass in the Cape San Lu area. Its flight, color pattern and white wing stripe aid in identification.

White-winged Petrel  
(Pterodroma leucoptera)

This species was abundant in the south equatorial counter current. The population probably represents post-breeding birds from Mas Afuerra. The overlapping pelagic ranges of Pterodroma leucoptera and Pterodroma hypoleuca indicates a difference in feeding habitats which is as yet unknown. A careful analysis of environment and stomach contents of these two species should aid in answering questions on basic ecological concepts that would further the understanding of all species in the pelagic habitat.



Harcourt Storm Petrel  
(Oceanodroma castro)

I am quite sure I saw this species from about 5°S to 10°S. Due to the difficulty in separating this from Leach Storm Petrel, most birds were logged as Leach or next most similar species. The four individuals logged as Harcourt definitely lacked the dark feathers in the middle of the rump patch. Other than this I could find no difference in pattern, size, or behavior from Leach Storm Petrel. I must also state that these birds were not Oceanodroma tethys, or Oceanites oceanicus and were recorded as Oceanodroma castro by the elimination of the above two species.

Leach Storm Petrel  
(Oceanodroma leucorhoa)  
White-rumped Storm Petrel sp.

A very abundant species, perhaps one of the most abundant birds in the world. Recorded in every section of the cruise, being second only to Sooty Terns in total number of individuals. Large populations were found about 25°N, 13°N, 10°N, and throughout the equatorial doldrums. After crossing the doldrums, Leach became rarer until they finally disappeared at 17°S.

Under good conditions two forms can be recognized in the field. The northern form, Oceanodroma l. leucorhoa, appears larger, darker, and has more white in the rump. The southern form which includes about three sub-species, is smaller, browner, and the amount of white in the rump varies considerably. Both forms were observed in all sections of the cruise track, but I think the northern form was dominant at 25°N, and the southern birds at 13°N, 10°N, and all of area "C". The large populations along the doldrums contained both forms of unknown ratios. All sub-species inter-mix freely at sea, and at least two races were collected from the same flock. The southern birds were in very worn plumage especially on head and throat while the northern birds were not.

Ashy Petrel  
(Oceanodroma homochroa)

This species evidently occurs south of its breeding range at least to the Revilla-Gigedo Islands in non-breeding season. It was observed in flocks of light and dark-rumped Leach and was distinguished by its smaller, chunkier appearance, fluttering flight, and light grey under-wing converts.



White-throated Storm Petrel  
(Nesofregetta albigularis)

Expecting Fregetta grallaria, I was quite surprised to find Nesofregetta the only white-bellied Storm Petrel present along the southern equatorial counter-current. When taken into consideration the scarcity with which this species is recorded in close proximity to nesting colonies, I must conclude that Nesofregetta is an abundant bird of the counter currents transversed on this trip. Birds south of the equator are probably of Marquesas origin. It is quite possible that birds north of the equator are from the Christmas Island population.

Least Petrel  
(Halocyptena microsoma)

This species was recorded regularly in the seas surrounding the Revilla-Gigedos Islands and to the east. The majority of the population winters in the seas around Panama along with the Black Petrel (Oceanodroma melania) which was totally lacking from the area covered in this cruise.

Red-billed Tropicbird  
(Phaethon aethereus)

Red-billed Tropicbirds were found in proximity to the coast, or islands which they breed on. Unlike its larger relative, the Red-tailed Tropicbird, it was very rarely attracted to the ship.

Red-tailed Tropicbird  
(Phaethon rubricauda)

This species was found commonly in the Southern Hemisphere, regularly around Clipperton Island and occasionally in other areas with the exception of area "A". The origin of birds observed throughout the trip is quite difficult to determine. It may be safe to say that Southern Hemisphere birds were from the Marquesas, but this would have to be proven. Birds around Clipperton Island indicate previously unrecorded breeding population may be present but this is unconfirmed. If there isn't a breeding population in this area, the birds are probably from the Galapagos - 1,200 miles, or the Hawaiian Leewards - 3,500 miles away!

Blue-footed Booby  
(Sula nebouxii)

Blue-foots were encountered only rarely. They evidently do not wander far from their breeding islands.



Blue-faced Booby  
(Sula dactylatra)

All sightings north of the equator are probably from Revilla-Gigedo nesting stations. One bird in the Southern Hemisphere represents the only booby observed in that area.

An excellent example of the highly developed behavior pattern which is so typical of the family Sulida was observed and is here recorded. While cruising along at our normal 10 knots a magnificent adult Blue-faced Booby happened to spot the David Starr Jordan. To satisfy its curiosity the beast changed course and flew over our ship to investigate this strange object which had entered its watery domain. In no time at all the bird realized that it could travel along motionless, utilizing the up-draft produced by the ship's bow. Everything was going fine until our great booby spotted a morsel of food, wheeled and dove. The bird returned to the surface with the fish in its bill just in time to see the David Starr Jordan run him over.

Red-footed Booby  
(Sula sula)

All Red-foots observed were light phase, and therefore can be attributed to the Revilla-Gigedos Islands, Tres Marias, and Clipperton Islands. The adults of this race have dark tails making them difficult to distinguish from Blue-faced Boobies at a distance. Red-foots were the most abundant booby at sea, being replaced by Brown Boobies when close to shore.

Brown Booby  
(Sula leucogaster brewsteri)

Brown Boobies are the most abundant booby along the coast, and only rarely wander out to sea. This sub-species is identified by the white headed males.

Magnificent Frigatebird  
(Fregata magnificens)

The scarcity of frigatebird sightings is due to this species preferring coastal waters, and the probability of this being their nesting season. There is no indication of Fregata minor being present, although it is known to occur in the area.

Red Phalarope  
(Phalaropus fulicarus)

This species was recorded in every section and on almost every day of the cruise. The largest concentrations were found along the coast in area "C". Almost every natural slick contained Phalaropes and Storm Petrels as the two plankton feeding birds prefer to feed in calm waters.

Phalaropes appeared regularly on nocturnal stations, and could be identified by their call.



Northern Phalarope  
(Lobipēs lobatus)

This species can be identified by its dark, striped back. The main wintering grounds are off of Peru and Chile. I feel that very few Northern Phalaropes wintered in this area, and the vast majority of Phalaropes sp. can be attributed to Red Phalaropes.

Pomarine Jaeger  
(Stercorarius pomarinus)

Pomarines are the only species of Jaeger wintering commonly in the Northern Hemisphere. Large concentrations were found along the coast and in the shipping lanes. This species, like gulls, has learned to follow ships early in the morning and late in the afternoon to receive scraps for their respective meals. A few birds still exist to the high seas by stealing fish from terns. Notes were taken on one Jaeger catching a Storm Petrel.

Parasitic Jaeger  
(Stercorarius parasiticus)

Although not common, this species occurs regularly in the tropical seas off of Central America. Birds were associated with Sooty Tern flocks or found singularly. One individual was observed chasing a young Red-tailed Tropicbird.

Young birds are very difficult to separate from young Pomarine Jaegers. Size, flight, and broadness of the wing are helpful, but most individuals must be logged as Jaeger sp.

The dominant adult color-phase present was dark.

Gulls:  
Laridae

All gulls recorded on this cruise were observed on the first day, after leaving San Diego. For purpose of simplicity they can be divided into two categories; coastal ship following species, and pelagic species.

The first category includes California Herring and Western Gulls in which the adults of all three species were the most important group.

The second group contains the Black-legged Kittiwake and the Sabine Gull. Immature Kittiwakes outnumber the adults about 5 to 1. Two immature Sabine Gulls represent one sighting and were of usual occurrence in this area at this season. The main wintering population of Sabine Gulls is at the Humboldt current off of South America.



White-capped Noddy  
(Anous minutus)

The single sighting of this species on February 16 is probably from Clipperton Island.

Sooty Tern  
(Sterna fuscata)

The most abundant species of the trip and the dominant species of areas "C", "E", and "F". The distribution was not as uniform as Leach Storm Petrel, but Sooty Terns were present in large numbers in select areas.

Several populations representing different island origins were encountered. South of the equator Sooty Terns were probably from the Marquesas Islands. The immature found in this area was in fresh plumage indicating a fall nesting population characteristic of the Marquesas.

Flocks feeding adjacent to Clipperton Island contained dark immatures. These birds are most likely of Clipperton origin and indicate a prolonged nesting season in Clipperton. Immature Sooty Terns recorded around the Revilla-Gigedos and to the east were molting from immatures to sub-adult plumage. These individuals appear light brown and are probably about 10 months old.

An interesting ethological note is the lack of nocturnal sightings along the shipping lanes.

White Tern  
(Gygis alba)

Fairy Terns were observed casually in the Southern hemisphere. Individual sightings were of birds feeding alone, or in association with Sooty Tern flocks. Those birds are probably from the Marquesas Islands.

Xantus Murrelet  
(Endomychura hypoleuca)

Observed adjacent to Baja California and identified as to race by their white underwing.



TABLE 1. Summary of Area Observations.

	A	B	C	D	E	F	TOTAL
No. Miles	321	478	837	528	903	151	3218
No. Hours	33.3	47.9	72.3	48.7	89.1	17.1	308.5
No. Birds	290	1577	750	309	497	597	4020
No. Flocks	9	23	16	6	12	12	78
No. Species	15	16	19	8	18	13	41

TABLE 2. Abundance of Species Groups by Area.

Species	A	B	C	D	E	F	Total	% of Total
Shearwater-Petrel	15	674	74	10	126	256	1155	28.7%
Storm Petrel	144	308	154	268	58	64	996	24.8%
Tropicbird	0	15	16	1	24	3	59	1.5%
Booby	0	259	110	0	1	1	371	9.2%
Frigatebird	5	13	8	0	0	0	26	.6%
Phalarope	7	10	68	24	11	11	131	3.3%
Jaeger	4	9	9	0	9	2	33	.8%
Gull	109	0	0	0	0	0	109	2.7%
Tern	0	289	311	6	268	260	1134	28.2%
Alcid	6	0	0	0	0	0	6	.2%
Total	290	1577	750	309	497	597	4020	100.0%



TABLE 3. Species Abundance by Areas.

Species	Area-						Total
	A	B	C	D	E	F	
Black-footed Albatross	1	0	0	0	0	0	1
Pale-footed Shearwater	0	0	0	0	1	0	1
Wedge-tailed Shearwater	0	0	51	0	0	240	291
Slenderbilled Shearwater	0	0	0	0	2	0	2
Christmas Shearwater	0	0	0	1	0	0	1
Townsend Shearwater	0	668	19	0	0	0	687
Black-vented Shearwater	3	0	0	0	0	0	3
Puffinus sp.	0	0	0	0	0	1	1
Dark-rumped Petrel	0	0	0	1	0	1	5
Juan Fernandez Petrel	0	0	2	0	10	5	17
Tahiti Petrel	0	0	0	0	1	1	2
Black-winged Petrel	0	0	0	0	29	0	29
Kermadec Petrel	0	4	0	1	7	2	14
Murphy Petrel	0	0	0	0	9	0	9
Cook Petrel	5	0	0	1	0	2	8
White-winged Petrel	0	0	0	0	52	0	52
Pterodroma sp.	0	0	0	2	5	1	8
Shearwater/Petrel	6	2	2	4	10	0	24
Harcourt Storm Petrel	0	0	0	0	4	0	4
Leach Storm Petrel	17	198	88	120	18	42	483
Ashy Storm Petrel	2	1	0	0	0	0	3
White-throated Storm Petrel	0	0	0	0	8	2	10
Least Storm Petrel	0	9	2	0	0	0	11
White-rumped Storm Petrel <u>sp.</u>	124	77	64	148	27	20	460
Dark-rumped Storm Petrel <u>sp.</u>	1	4	0	0	0	0	5
Storm Petrel <u>sp.</u>	0	19	0	0	1	0	20
Red-billed Tropicbird	0	2	15	0	0	0	17
Red-tailed Tropicbird	0	13	1	1	24	3	42
Blue-footed Booby	0	6	1	0	0	0	7
Blue-faced Booby	0	32	10	0	1	0	43
Red-footed Booby	0	220	33	0	0	0	253
Brown Booby	0	1	62	0	0	1	64
Booby <u>sp.</u>	0	0	4	0	0	0	4
Magnificent Frigatebird	5	12	4	0	0	0	21
Fregata <u>sp.</u>	0	1	4	0	0	0	5
Red Phalarope	1	10	39	22	10	11	93
Northern Phalarope	3	0	1	0	0	0	4
Phalarope <u>sp.</u>	3	0	28	2	1	0	34
Pomarine Jaeger	4	3	4	0	7	0	18
Parasitic Jaeger	0	6	2	0	0	2	10
Long-tailed Jaeger	0	0	1	0	2	0	3
Jaeger <u>sp.</u>	0	0	2	0	0	0	2
California Gull	13	0	0	0	0	0	13
Herring Gull	32	0	0	0	0	0	32
Western Gull	16	0	0	0	0	0	16
Black-legged Kittiwake	44	0	0	0	0	0	44
Sabine's Gull	2	0	0	0	0	0	2
Gull <u>sp.</u>	2	0	0	0	0	0	2
White-capped Noddy	0	0	1	0	0	0	1



TABLE 3. continued'

Species	Area						Total
	A	B	C	D	E	F	
Sooty Tern	0	289	309	6	253	260	1117
White Tern	0	0	0	0	15	0	15
Tern sp.	0	0	1	0	0	-0	1
Xantus Murrelet	6	0	0	0	0	0	6
<hr/>							
Total	290	1577	750	309	497	597	4020



TABLE 4. Summary of Area "A".

Table 4a. Summary of Daily Observations

Date	Miles	Hours	Birds	B/LM	Flocks	Species
Feb. 8	83	10.0	135	1.626	2	10-
Feb. 9	104	10.5	122	1.173	7	2
Feb. 10	95	9.3	19	.200	0	3
Mar. 22	39	3.5	14	.359	0	4
Total	321	33.3	290	.903	9	15

Table 4b. Nocturnal Observations in Area "A".

Date	Miles	Hours	Birds	Species
Feb. 9	40	4	3	White-rumped Storm Petrel <u>sp.</u> (2) Townsend Shearwater (1)

Table 4c. Daily Species Abundance in Area "A"

Species	February- 8	9	10	March- 22	Total
Black-footed Albatross	1	0	0	0	1
Black-vented Shearwater	3	0	0	0	3
Cook Petrel	0	0	3	2	5
Shearwater-Petrel	6	0	0	0	6
Leach Storm Petrel	0	1	7	9	17
Ashy Storm Petrel	0	2	0	0	2
White-rumped Storm Petrel <u>sp.</u>	0	118	6	0	124
Dark-rumped Storm Petrel <u>sp.</u>	0	1	0	0	1
Magnificent Frigatebird	0	0	3	2	5
Red Phalarope	0	0	0	1	1
Northern Phalarope	3	0	0	0	3
Phalarope <u>sp.</u>	3	0	0	0	3
Pomarine Jaeger	4	0	0	0	4
California Gull	13	0	0	0	13
Herring Gull	32	0	0	0	32
Western Gull	16	0	0	0	16
Black-legged Kittiwake	44	0	0	0	44
Sabine Gull	2	0	0	0	2
Gull <u>sp.</u>	2	0	0	0	2
Xantus Murrelet	6	0	0	0	6
Total	135	122	19	14	290



TABLE 5. Summary of Area "B".

Table 5a. Summary of Daily Observations

Date	Miles	Hours	Birds	B/LM	Flocks	Species
Feb. 11	108	10.5	302	2.796	10	5
Feb. 12	112	11.6	945	8.437	6	12
Feb. 13	71	6.3	60	.845	1	7
Mar. 18	94	8.7	91	.968	4	8
Mar. 19	32	5.3	107	3.344	2	8
Mar. 20	39	3.5	40	1.026	0	4
Mar. 21	22	2.0	32	1.455	0	3
Total	478	47.9	1577	3.297	23	16

Table 5b. Nocturnal Observations in Area "B".

Date	Hours	Miles	Positions	Birds	Species
Feb. 11	4	41	-	5	White-rumped Storm Petrel sp. (5)
Feb. 12	4	0	12° 27' 111° 42' W	16	Townsend Sh. (3) Leach's Storm Pet. (12) Sooty Tern (1)

Table 5c. Daily Species Abundance in Area "B"

Species	February			March				Total
	11	12	13	18	19	20	21	
Townsend Shearwater	213	331	14	4	50	29	27	668
Kermadec Petrel	0	1	3	0	0	0	0	4
Shearwater/Petrel	0	0	2	0	0	0	0	2
Leach Storm Petrel	12	73	18	69	21	2	3	198
Ashy Storm Petrel	0	0	1	0	0	0	0	1
Least Storm Petrel	4	2	0	3	0	0	0	9
White-rumped Storm Petrel sp.	1	57	12	1	5	1	0	77
Dark-rumped Storm Petrel sp.	3	0	1	0	0	0	0	4
Storm Petrel sp.	19	0	0	0	0	0	0	19
Red-billed Tropicbird	2	0	0	0	0	0	0	2
Red-tailed Tropicbird	0	5	0	7	1	0	0	13
Blue-footed Booby	0	5	0	1	0	0	0	6
Blue-faced Booby	0	26	2	1	1	2	0	32
Red-footed Booby	48	157	6	1	2	6	0	220
Brown Booby	0	0	1	0	0	0	0	1
Magnificent Frigatebird	0	12	0	0	0	0	0	12
Fregata sp.	0	1	0	0	0	0	0	1
Red Phalarope	0	0	0	4	4	0	2	10
Pomarine Jaeger	0	2	0	0	1	0	0	3
Parasitic Jaeger	0	6	0	0	0	0	0	6
Sooty Tern	0	267	0	0	22	0	0	289
Total	302	945	60	91	107	40	32	1577



TABLE 6. Summary of Area "C".

Table 6a. Summary of Daily Observations

Date	Miles	Hours	Birds	B/IM	Flocks	Species
Feb. 14	92	8.6	19	.206	0	8
Feb. 15	75	7.9	134	1.787	1	8
Feb. 16	79	6.8	221	2.708	8	13
Feb. 20	104	7.7	69	.663	2	9
Feb. 21	91	8.6	23	.253	0	7
Feb. 22	111	8.3	177	1.595	3	8
Feb. 23	90	8.2	41	.456	1	5
Feb. 24	117	8.7	27	.231	0	5
Feb. 25	78	7.5	39	.487	1	5
Total	837	72.3	750	.896	16	19

Table 6b. Nocturnal Observations in Area "C".

Date	Hours	Miles	Position	Birds	Species
Feb. 14	2	0	15°54' 108°08'W	2	White-rumped S. Pet. (2)
Feb. 24	2	0	04°28' 105°00'W	3	Leach's S. Pet. (2) Wedge-tailed Sh. (1)



TABLE 7. Summary of Area "D".

Table 7a. Summary of Daily Observations.

Date	Miles	Hours	Birds	B/LM	Flocks	Species
Feb. 26	92	7.3	96	1.043	2	3
Feb. 27	66	7.8	64	.968	2	2
Feb. 28	87	8.1	29	.333	0	4
Mar. 12	49	4.7	16	.326	1	2
Mar. 13	73	5.2	11	.151	1	1
Mar. 14	74	8.4	71	.959	0	3
Mar. 15	87	7.2	22	.322	0	4
Total	528	48.7	309	.585	6	8

Table 7b. Nocturnal Observations in Area "D".

Date	Miles	Hours	Birds	Positions	Species
Feb. 26	0	3	4	00°10'S 105°00'W	Sh./Pet., WRSP (3)
Feb. 28	0	2	4	04°54'S 105°07'W	Sh./Pet. (1), WRSP (2), Sooty Tern (1)
Mar. 13	0	2.5	1	00°20'S 112°00'W	WRSP (1)
Mar. 14	0	1.5	9	02°36'N 112°06'W	WRSP (3), Red Phalarope (6)
Mar. 15	0	2.5	10	05°30'N 112°02'W	Sh./Pet. (JFP?) (1), Sh./Pet (TaH) (1), Red Phalarope (5), Sooty T. (3).



TABLE 7. (continued)

Table 7c. Daily Species Abundance in Area "D"

Species	February			March			Total
	26	27	28	12	13	14	
Christmas Shearwater	1	0	0	0	0	0	1
Dark-rumped Petrel	0	0	1	0	0	0	1
Kermadec Petrel	0	0	0	0	0	1	1
Cook's Petrel	0	0	0	0	0	1	1
Pterodroma sp.	0	0	0	0	0	1	2
Shearwater/Petrel	2	0	1	0	0	1	4
Leach Storm Petrel	31	14	2	15	11	35	120
White-rumped St. Pet sp.	62	48	18	0	0	20	148
Red-tailed Tropicbird	0	0	0	0	0	0	1
Red Phalarope	0	0	1	1	0	13	22
Phalarope sp.	0	2	0	0	0	0	2
Sooty Tern	0	0	6	0	0	0	6
Totals	96	64	29	16	11	71	309



TABLE 8. Summary of area "E".

Table 8a. Summary of Daily Observations

Date	Miles	Hours	Birds	B/IM	Flocks	Species
Mar. 1	75 ✓	8.8 ✓	31 ✓	.413	1	6
Mar. 2	86 ✓	8.4 8.6	61	.709	2	10
Mar. 3	<del>69</del> 70	<del>6.9</del> 6.8	80	1.159	3	8
Mar. 4	84	<del>8.1</del> 9.1	63	.750	2	11
Mar. 5	86	8.1	15	.174	0	7
Mar. 6	77	6.0	6	.078	0	3
Mar. 7	46	5.9	8	.174	0	3
Mar. 8	109	10.6	109	1.000	1	8
Mar. 9	104	9.8	22	.212	1	7
Mar. 10	92	8.8	3	.032	0	3
Mar. 11	75	7.7	99	1.320	3	4
Totals	903	89.1	497	.550	13	18

Table 8b. Nocturnal Observations in Area "E".

Date	Hours	Miles	Birds	Position	Species
Mar. 1	2.5	0	17	07°32'S 104°59'W.	Sh./Pet (1), Fairy Tern (13).
Mar. 9	4.0	0	1	10°00'S 112°00'W.	WRSP (1).
Mar. 11	2.5	0	95	4°52'S. 112°03'W.	Red Phalarope (12), Sooty Tern (76).



TABLE 8. (continued')

Table 8c. Daily Species Abundance in Area "E"

Species	March- 1	2	3	4	5	6	7	8	9	10	11	Totals
Pale-footed Sh.	0	0	0	0	0	0	0	1	0	0	0	1
Slender-billed Sh.	0	0	0	1	1	0	0	0	0	0	0	2
Juan Fernandez Petrel	0	1	2	5	0	0	2	0	0	0	0	10
Tahiti Petrel	0	1	0	0	0	0	0	0	0	0	0	1
Black-winged Petrel	4	4	0	6	3	1	1	7	1	0	2	29
Kermadec Petrel	0	0	0	7	0	0	0	0	0	0	0	7
Murphy Petrel	0	0	2	6	0	0	0	0	1	0	0	9
White-winged Petrel	2	5	31	13	0	0	0	0	0	0	1	52
Pterodroma sp.	1	0	0	1	1	0	1	0	0	0	1	5
Shearwater/Petrel	0	1	0	0	1	0	0	6	1	1	0	4
Harcourt Storm Petrel	0	4	0	0	0	0	0	0	0	0	0	4
Leach Storm Petrel	3	0	0	2	2	0	0	4	6	0	1	18
White-throated St. Pet.	0	4	2	0	0	0	0	0	1	1	0	8
White-rumped Storm Pet. <u>sp.</u>	9	2	4	2	1	0	0	5	0	0	4	27
Storm Petrel <u>sp.</u>	0	0	0	1	0	0	0	0	0	0	0	1
Red-tailed Tropicbird	0	2	2	4	3	1	4	7	0	1	0	24
Blue-faced Booby	0	0	0	0	1	0	0	0	0	0	0	1
Red Phalarope	0	3	0	1	2	4	0	0	0	0	0	10
Phalarope <u>sp.</u>	1	0	0	0	0	0	0	0	0	0	0	1
Pomarine Jaeger	0	0	0	0	0	0	0	6	1	0	0	7
Long-tailed Jaeger	0	0	0	0	0	0	0	2	0	0	0	2
Sooty Tern	9	29	36	12	0	0	0	70	7	0	90	253
White Tern	2	5	1	2	0	0	0	1	4	0	0	15
Totals	31	61	80	63	15	6	8	109	22	3	99	497



TABLE 9. Summary of Area "F".

Table 9a. Summary of Daily Observations.

Date	Miles	Hours	Birds	B/IM	Flocks	Species.
Mar. 16	87	8.4	64	.735	2	10
Mar. 17	64	8.7	533	8.328	10	11
Totals	151	17.1	597	3.990	12	13

Table 9b. Nocturnal Observations in Area "F".

Date	Hours	Miles	Birds	Position	Species
March 16	1.5	0	5	08° 04' N 112° 02' W.	Wedge-tail (1) WRSP (2) Sooty T. (2)

Table 9c. Daily Species Abundance in Area "F"

Species	March 16	March 17	Total
Wedge-tailed Shearwater	1	239	240
<u>Puffinus</u> sp.	1	0	1
Dark-rumped Petrel	0	4	4
Juan Fernandez Petrel	2	3	5
Tahiti Petrel	0	1	1
Kermadec Petrel	1	1	2
Cook Petrel	2	0	2
<u>Pterodroma</u> sp.	1	0	1
Leach Storm Petrel	10	32	42
White-throated Storm Pet.	2	0	2
White-rumped Storm Pet. <u>sp.</u>	8	12	20
Red-tailed Tropicbird	1	2	3
Brown Booby	0	1	1
Red Phalarope	9	2	11
Parasitic Jaeger	1	1	2
Sooty Tern	25	235	260
Totals	64	533	597



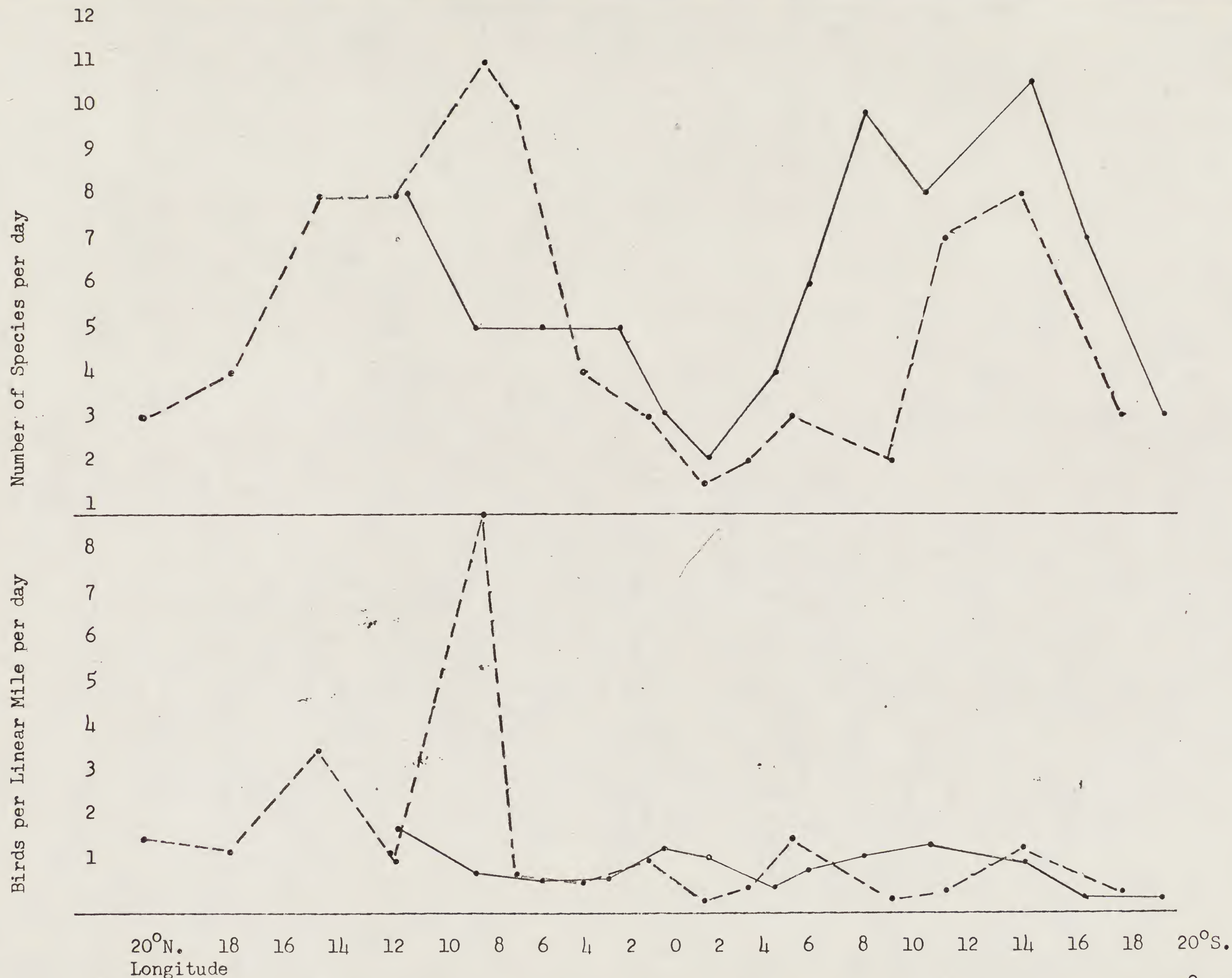


Figure 1. A Comparison of Birds per Linear Mile per day and Species per day along 105°W. and 112°W. Each point represents noon positions:  
 105°W.=  
 112°W.=











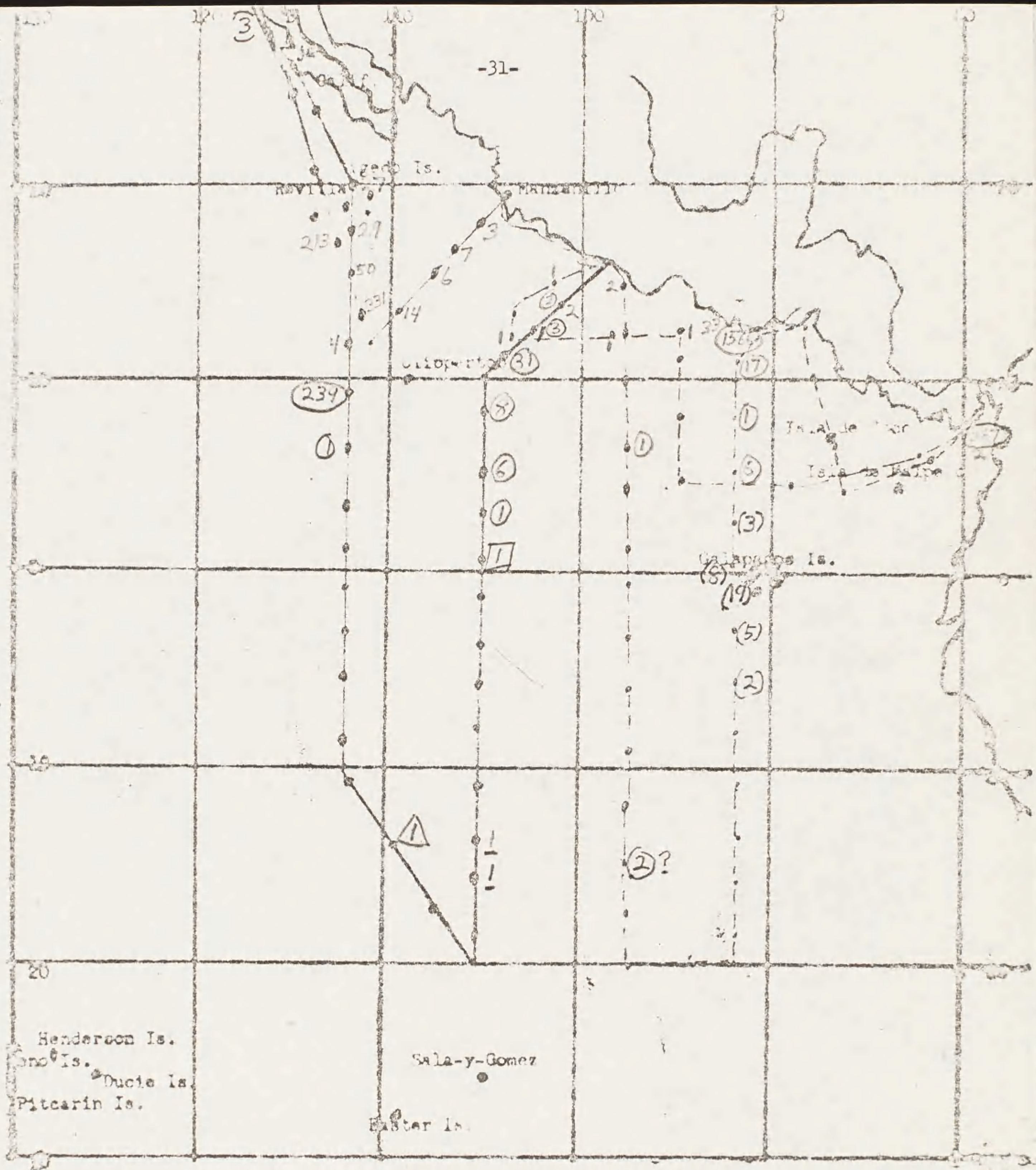


Figure 4. Distribution of the Genus Puffinus.

Black-vented Shearwater =  $\hat{1}$

Wedge-tail Shearwater =  $\bigcirc$

Pale-footed Shearwater =  $\triangle$

Audubon Shearwater = (1)

Townsend's Shearwater = 1

Slenderbill Shearwater =  $\frac{1}{2}$

Christmas Shearwater =  $\square$







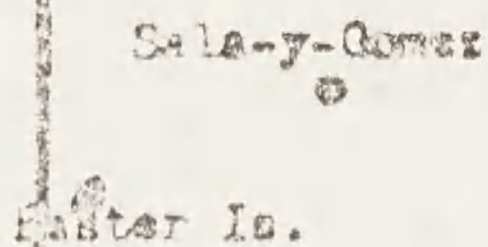


Figure 6. Kermadec Petrel - 1  
Tahiti Petrel - ①  
Murphy's Petrel - ①







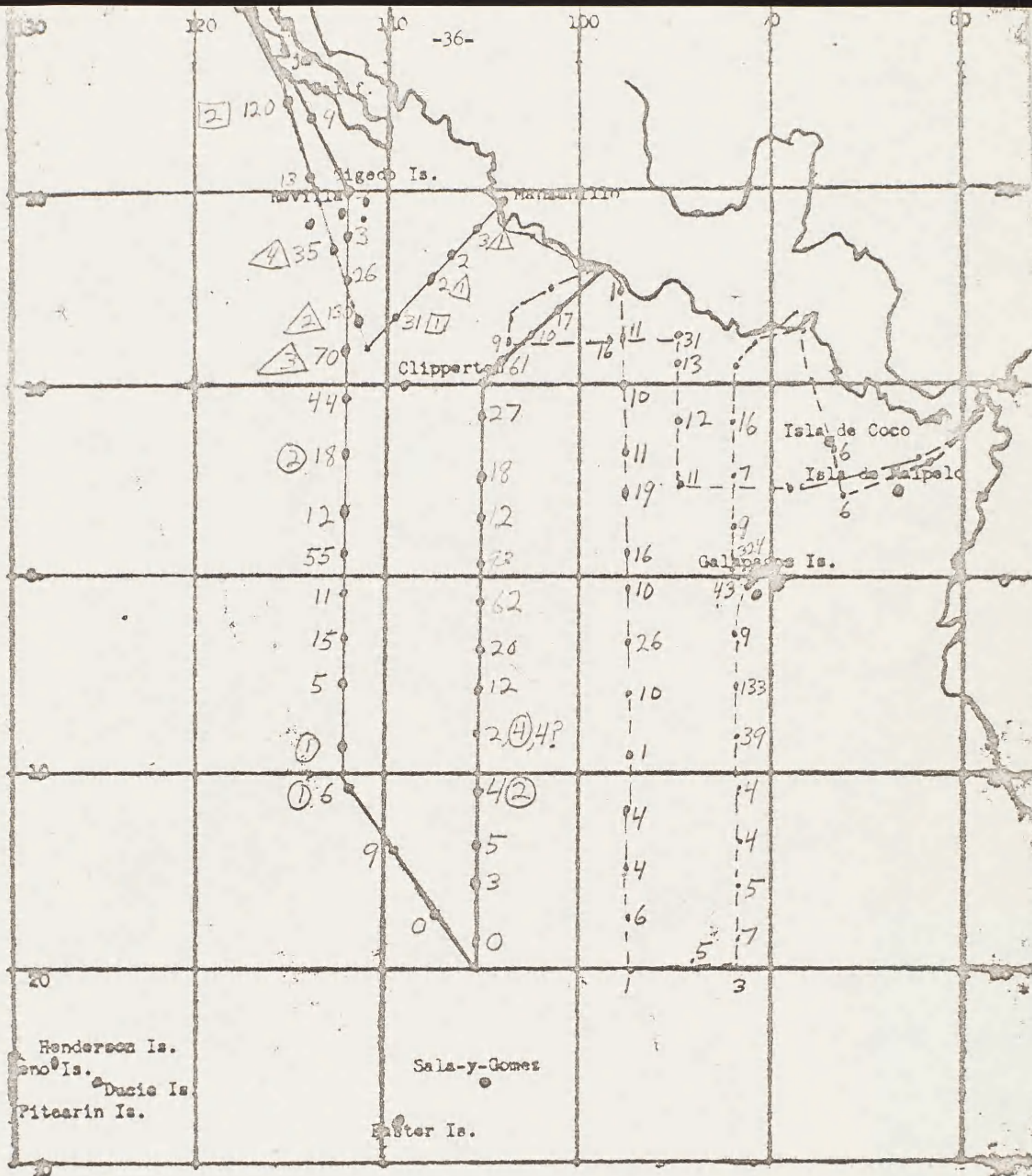


Figure 8. Storm Petrel Distribution  
 Leach and White-rumped Storm Petrel sp. - 2  
 Ashy Petrel - 2  
 Least Petrel - 2  
 White-throated Petrel - 2







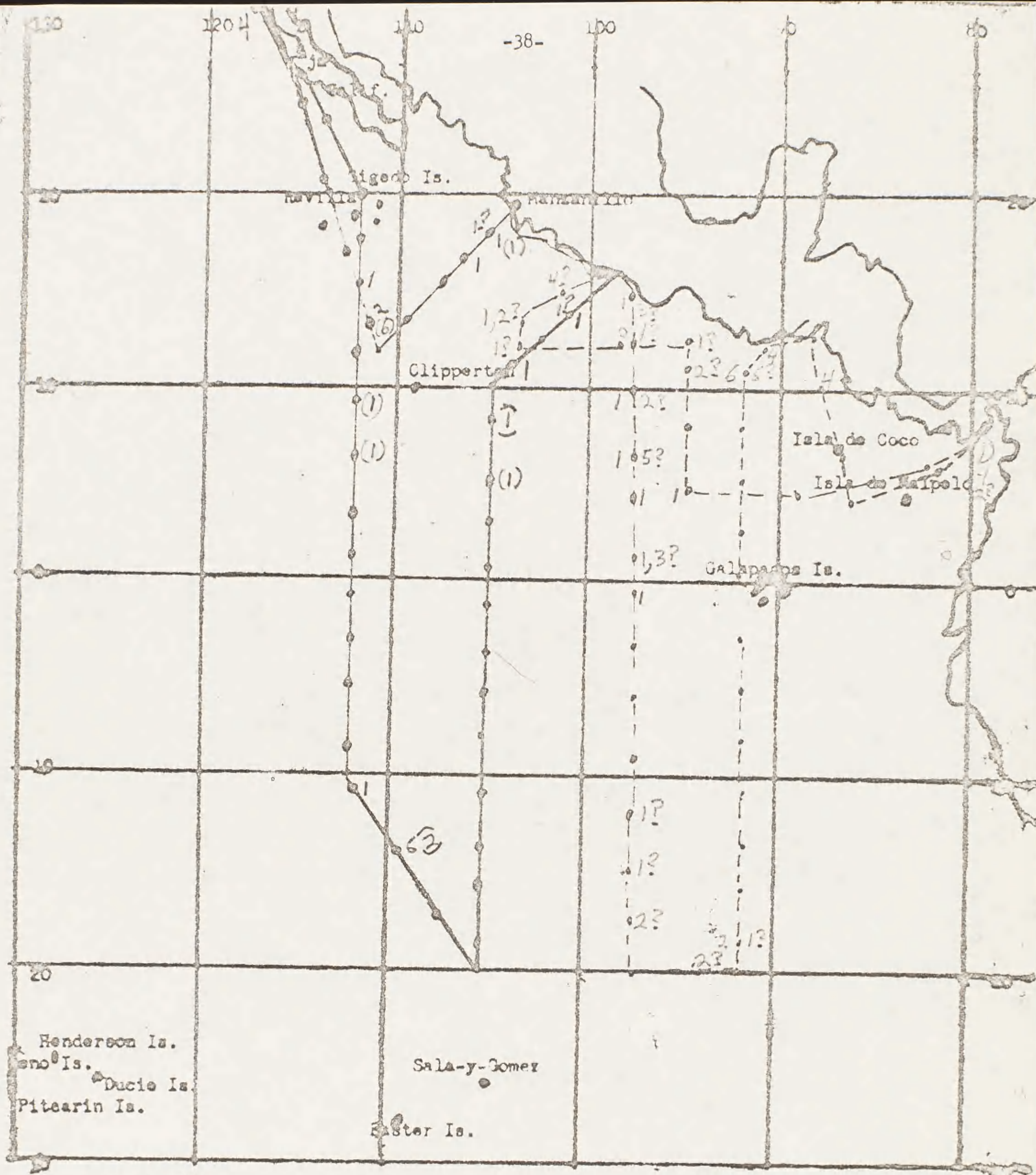


Figure 10. Jaeger Distribution

Pomarine Jaeger = 1  
 Parasitic Jaeger = (1)  
 L.-tailed Jaeger = 1  
 Jaeger sp.? = 1?  
 Skuas = 1



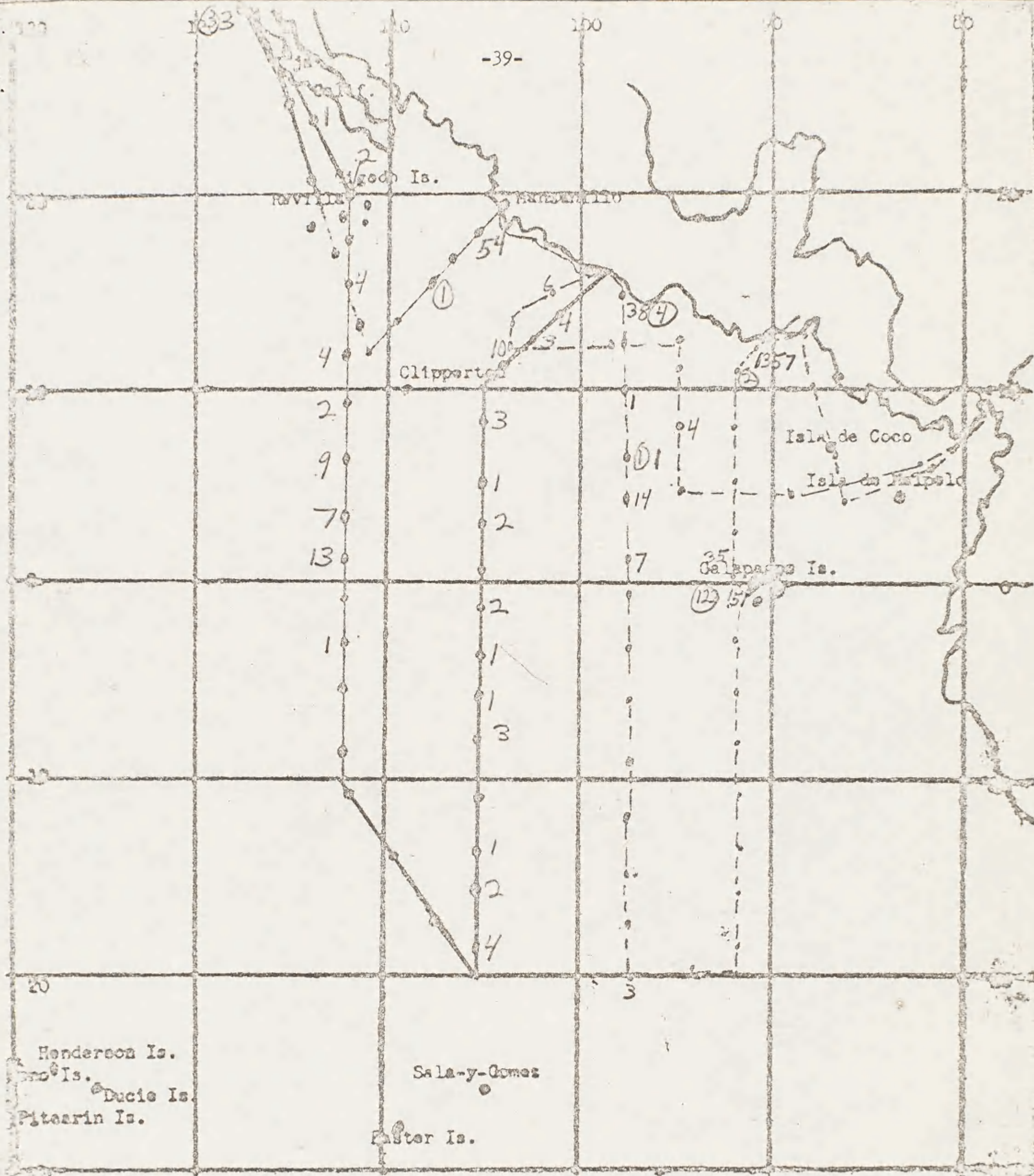


Figure 11. Red Phalarope and Phalarope sp. - /  
Northern Phalarope - (1)









Figure 13. Whales and porpoise - /  
Turtles - ①



APPENDIX A.

Scientists: For SCRIPPS Cruise No. 9.

Dr. A. Longhurst (cruise leader).  
R. Owen (assistant cruise leader).

APPENDIX B.

Station Types - Extracted from manual observations.

Primary - A - full hydrographic and biological (noon and midnight).

Secondary - B - limited hydrographic and biological

Limited - C - limited hydrographic.

Station A. (Twice daily at approximately noon and midnight)

Secchi disc.....5 min.

TDS to 1000 m..... 30 min.

Hydrocast to 1000 m.....60 min.

Oblique and surface net tow.....30 min.

Plankton recorder.....30 min.

Micronekton net.....60 min. (underway, night)

Lexan bottles included in hydrocast for chlorophyll, noon and midnight, and for productivity, noon only. Phytonet noon and midnight, no station time required.

Dipnetting at midnight station only.

Station B. (Twice daily at approximately 0600 and 1800 local time)

TDS to 500 m.....15 min.

Secchi disc.....5 min.

Hydrocast to 500 m.....25 min.

Oblique and surface net tows.....30 min.

Station C. (Three hourly intervals daily)

XBT or BT.....0 or 2 min.



APPENDIX C.

Coastal Observations II.  
Baja California March 23 and 24.

March 23 - Cedras Island

Birds

Black-vented Shearwater - 4000<sup>+</sup>  
Pink-footed Shearwater - 50<sup>+</sup>  
Sooty Shearwater - 40<sup>+</sup>  
Brandt Cormorant - 500<sup>+</sup>  
Brown Pelican - 100<sup>+</sup>  
California Gull - 200<sup>+</sup>  
Herring Gull - 3000<sup>+</sup>  
Western Gull - 3000<sup>+</sup>  
Heerman Gull - 10  
Royal Tern - 15

Mammals

White-sided Porpoise Delphinus - Sea Lions

March 24 - Ensanada - Los Coronodas

Birds

Sooty Shearwater - 200<sup>+</sup>  
Black-vented Shearwater - 100<sup>+</sup>  
Pomarine Jaeger - 20  
Brandt Cormorant - 300<sup>+</sup>  
Pelagic Cormorant - 10<sup>+</sup>  
Black Brant - 25  
Herring Gull - 50  
California Gull - 30  
Western Gull - 100

Mammals

Grey Whales - 20

APPENDIX D.

Coastal Observations I., Manzanillo and Acapulco  
February 19.

Birds

Red Phalarope - 3000<sup>+</sup>  
Brown Booby - 1000<sup>+</sup>  
Red-billed Tropicbird - 400<sup>+</sup>  
Pomarine Jaeger - 50<sup>+</sup> (only 1 dark adult)  
Laughing Gulls - 50<sup>+</sup>  
Common Terns - 20<sup>+</sup>  
Townsend Shearwater - 1

Mammals

White-sided Porpoise - Delphinus



APPENDIX E.

Rocko Partida  
March 20, 1967

Rocko Partida is a rock about 110 feet high, 150 feet long, and 75 feet wide, jutting abruptly out of the Pacific at about 18°55'N, 112°04'W. Birds probably breeding on the island are: Common Noddy (300<sup>±</sup>), Blue-faced Booby (20<sup>±</sup>), Leach's Storm Petrel, Townsend's Shearwater, and possibly Sooty Terns (a swirl of about 50 birds with courtship flight was observed). Six Magnificent Frigatebirds roosted on the island.



Date 4 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0602 Position: Lat.       , Long.       

Sunset: Time 1823 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 157

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0400-0530
2. 1000 1225
3. 1600-1720
4. 2100 0105
5.

2 35  
1 30  
2 25  
1 20  
3  
9

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200	12 53	104 56	19	11		
0300						
0400	13 15	104 56				
0500	13 15	56				
0600	13 20	56				
0700	30	57				
0800	40	57				
0900	50	58				
1000	14 00	104 58				
1100						
1200	14 00	58				
1300	06	58				
1400	16	59				
1500	26	59				
1600	14 36	105 00				
1700	36					
1800	41					
1900	53					
2000	04					
2100	15 15	104 59				
2200						
2300						
2400						



Date 5 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0603 Position: Lat.           , Long.           

Sunset: Time 1822 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
Miles travelled from sunrise to sunset =             
Miles travelled from sunset to 2400 hours =            } 159

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0500 - 0640			1 40
2.				2 40
3.	1030 - 1310 = 1635		10456	1 10
4.	1715 1825 = 1723		10453	1 30
5.	2230 0045		1800	10500

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100						
0200						
0300	1532	10458				
0400						
0500	1559	10458				
0600	59	58				
0700	1603	58				
0800	12	57				
0900	21	57				
1000	30	56				
1100	1635	10456				
1200						
1300	1635	10456				
1400	45	55				
1500	57	54				
1600	1709	53				
1700	21	53				
1800	1723	10453				
1900						
2000						
2100						
2200						
2300	1800	10500				
2400						



Date 6 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0600 Position: Lat.           , Long.           

Sunset: Time 1823 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
Miles travelled from sunrise to sunset =             
Miles travelled from sunset to 2400 hours =            } 165

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0445 0615 18 44		105 03	2 45 1 30
2.				3 10
3.	1015 1325 19 29		105 05	5 40
4.	1700 - 2240			11 5
5.				12

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100			18	11		
0200						
0300						
0400						
0500						
0600	18 44	105 03				
0700	53					
0800	19 04					
0900	19 15					
1000	19 26					
1100	19 29	105 05				
1200	1 1	1				
1300						
1400	19 32					
1500	19 38	105 02				
1600	49	05 00				
1700	20 00	104 58				
1800						
1900						
2000						
2100						
2200		104 58				
2300		01				
2400		18				



Date 7 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0600 Position: Lat.           , Long.           

Sunset: Time 1821 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100		15	33	11		
0200		22				
0300		29				
0400	19 57	26				
0500	58	43				
0600	49	50				
0700	40	105 57				
0800	31	106 03				
0900	22	106 10				
1000	15 13	106 17				
1100	18 24	106 24				
1200	17 55	106 31				
1300						
1400						
1500	17 31	106 46				
1600						
1700	17					
1800	17 05	107 05				
1900	58	10				
2000	50	15				
2100	16 42	107 21				
2200						
2300						
2400	16 19	107 41				



Date 8 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0610 Position: Lat.       , Long.       

Sunset: Time 0834 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 297

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			33	10		
0300	15 52	107 57				
0400	42	108 04				
0500	33	10				
0600	15 23	108 17				
0700	18	23				
0800	10	29				
0900	15 01	108 35				
1000	14 52	42				
1100	43	49				
1200	14 34	108 56				
1300	23	109 04				
1400	16	109 12				
1500	14 08	109 20				
1600	14 00	35				
1700	13 53	30				
1800	13 46	109 35				
1900	38	40				
2000	30	45				
2100	13 23	109 49				
2200						
2300						
2400	12 52	110 11				



Date 9 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0624 Position: Lat.       , Long.       

Sunset: Time        Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 254

TIME OF FIX TYPE OF FIX LATITUDE LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100			33	11		
0200						
0300	12 28	110 26				
0400						
0500						
0600	12 00	110 45				
0700	11 52	110 51				
0800	11 44	111 57				
0900	11 35	111 04				
1000	11 26	111 10				
1100	11 17	111 15				
1200	11 08	111 20				
1300	11 00	111 25				
1400	10 53	111 30				
1500	10 45	111 34				
1600	10 36	111 39				
1700	10 27	111 44				
1800	10 19	111 49				
1900						
2000	10 10	112 00				
2100						
2200						
2300						
2400						



Date 10th Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0632 Position: Lat.           , Long.           

Sunset: Time 1845 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 156

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.	9th 2025 0215	10.00 S	112° 00' W
2.	0600-735		2-75
3.	1100-1315		1-35 213
4.	1645 1900		2-15 14
5.	2245 0024		1-15 14
			9-35

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			00	11		
0300						
0400	9 41	112 01				
0500	30					
0600	9 20	112 02				
0700	9 20	01				
0800	15	01				
0900	08 04	00				
1000	08 53					
1100	8 42	111 59				
1200		59				
1300	8 42	00				
1400	25					
1500	25					
1600	15					
1700	8 05	112 02				
1800						
1900						
2000						
2100						
2200						
2300	7 35	112 03				
2400						



Date 10th Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.           , Long.           

Sunset: Time 1842 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 147

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0530 0655

2 25  
1 25

2. 1100 1355

3  
1 30

3. 1700 1830

2 30

4.

5. 2130 0225

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100			<u>36</u>	<u>11</u>		
0200						
0300						
0400						
0500						
0600	<u>6 37</u>	<u>112 02</u>				
0700	<u>6 36</u>					
0800	<u>6 26</u>					
0900	<u>6 16</u>					
1000	<u>6 06</u>					
1100	<u>5 55</u>					
1200						
1300						
1400	<u>5 55</u>	<u>02</u>				
1500	<u>4 48</u>	<u>03</u>				
1600	<u>3 35</u>	<u>03</u>				
1700	<u>05 26</u>	<u>112 03</u>				
1800						
1900						
2000						
2100						
2200	<u>4 52</u>	<u>03</u>				
2300						
2400						



Date 12 Feb March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.       , Long.       

Sunset: Time 1842 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =         
Miles travelled from sunrise to sunset =        } 135  
Miles travelled from sunset to 2400 hours =       

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0600 - 0725		2 5	
2.	1030 1340		1 5	
3.	1700 - 1815		3	
4.	2130 0055		1 23	
5.			2 5	
			11	

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100			00	11		
0200						
0300						
0400	4 38	112 04				
0500	4 27	04				
0600	4 16	04				
0700						
0800						
0900						
1000						
1100	03 46	112 07				
1200						
1300	03 40	112 07				
1400	36					
1500	03 25	112 07				
1600	03 14	07				
1700	03 03	07				
1800	03					
1900	07					
2000	47					
2100	37					
2200	2 32	05				
2300						
2400						



Date 13 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0635 Position: Lat.       , Long.       

Sunset: Time 1841 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 147

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0445 0615 1
2. 1015 1315 15
3. 1630 1830 3
4.        2
5. 21-0010 3

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600	<u>153</u>	<u>112 03</u>				
0700						
0800						
0900						
1000						
1100	<u>01 14</u>	<u>03</u>				
1200						
1300	<u>01 14</u>	<u>03</u>				
1400	<u>01 06</u>					
1500	<u>00 57</u>					
1600	<u>00 48</u>					
1700	<u>00 44</u>	<u>02</u>				
1800						
1900	<u>0 40</u>	<u>112 00</u>				
2000	<u>0 31</u>	<u>1</u>				
2100	<u>0 20</u>	<u>112 00</u>				
2200						
2300						
2400						



Date 14 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.           , Long.           

Sunset: Time 1840 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 150

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0430 0605      15
2. 1115 1420      3
3. 1745 1905      1
4. 2230 -0035      15
- 5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100			<u>00</u>	<u>11</u>		
0200						
0300	<u>0 08N</u>	<u>111 59</u>				
0400						
0500						
0600	<u>0 25</u>	<u>57</u>				
0700	<u>34</u>	<u>57</u>				
0800	<u>44</u>	<u>58</u>				
0900	<u>54</u>	<u>58</u>				
1000	<u>1 04</u>	<u>59</u>				
1100	<u>1 14</u>	<u>59</u>				
1200	<u>1 16</u>	<u>112 00</u>				
1300						
1400	<u>1 16</u>	<u>12 00</u>				
1500	<u>1 26</u>	<u>1</u>				
1600	<u>38</u>	<u>2</u>				
1700	<u>50</u>	<u>3</u>				
1800	<u>2 03</u>	<u>112 04</u>				
1900						
2000						
2100						
2200						
2300	<u>2 36</u>	<u>112 06</u>				
2400						



Date 15 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.       , Long.       

Sunset: Time 1841 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =         
Miles travelled from sunrise to sunset =         
Miles travelled from sunset to 2400 hours =        } 182

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0500 - 0625
2. 1100 - 1310
3. 1630 1755
4. 2100 0010
- 5.

5  
15  
2  
15  
3  
55

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200	3 02	112 03	010	10		
0300	09	01				
0400	17	111 59				
0500	03 24	111 58				
0600		58				
0700	30	58				
0800	42	59				
0900	54	59				
1000	06	00				
1100	4 18	112 00				
1200						
1300	4 18					
1400	26					
1500	4 36	112 00				
1600	48					
1700	4 55	112 00				
1800	56					
1900	58					
2000	20					
2100	5 30	112 02				
2200						
2300						
2400						



Date 16 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0638 Position: Lat.           , Long.           

Sunset: Time 1841 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 165

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0400-0515
2. 1000 1330
3. 1700 1820
4. 2230 0100
- 5.

1 3  
3 5  
1 5  
1 5

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200	5 51	112 01	00	10		
0300						
0400	6 12	112 01				
0500	" "	" "				
0600	6 21					
0700	31	07				
0800	21	03				
0900	51	03				
1000	7 01	112 04				
1100						
1200						
1300	01	07				
1400	08	02				
1500	7 19	112 00				
1600	30					
1700	7 41	111 59				
1800	41					
1900						
2000						
2100						
2200						
2300	8 04	112 02				
2400						



Date 17 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.           , Long.           

Sunset: Time 1840 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 167

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0430 0550

2. 1000 - 1315

3. 1700 1810

4. 2230 0100

5.           

1  
1-5  
3  
1  
1-5

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			010	10		
0300						
0400						
0500	9 07	112 16				
0600	9 09	112 16				
0700	19	15				
0800	29	14				
0900	38	13				
1000	9 48	112 13				
1100						
1200						
1300	48	13				
1400	54	09				
1500	10 04	112 05				
1600	15	03				
1700	10 25	112 02				
1800	15	02				
1900	33	01				
2000	42	00				
2100	51	59				
2200	60	58				
2300	11 09	111 57				
2400						



Date 18 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.           , Long.           

Sunset: Time 1840 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 172

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0500 - 0620		1 15	78
2.	1100 1340		25	
3.	1500 1610		1 2	
4.	2200 0230			
5.				

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100						
0200			00	10		
0300						
0400						
0500	11 51	111 54				
0600	51	54				
0700	54	54				
0800	09	53				
0900	14	52				
1000	29	52				
1100	12 39	111 51				
1200						
1300		51				
1400	43	54				
1500	12 49	111 58				
1600						
1700	12 48					
1800	13 10	58				
1900	13 22	58				
2000	13 34	58				
2100	46	58				
2200	13 58	111 59				
2300						
2400						



Date 19 March 1967 Ship Jordan ( ) Cruise No.         
Organization                      Recorder                     

Sunrise: Time 0634 Position: Lat.           , Long.           

Sunset: Time 1838 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 149

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0600 0730 2.5
2. 1645 1355 1.5
3.            3
4. 1730 1845 1.5
5. 2230 0055 1.5

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			36	00		
0300						
0400	14 15	111 58				
0500	25					
0600	14 37	111 57				
0700	41.5					
0800	46					
0900	50					
1000	15 00					
1100	15 07	111 57				
1200						
1300						
1400	15 08	37				
1500	20	59				
1600	32	00				
1700	44	02				
1800	15 56	112 03				
1900						
2000						
2100						
2200						
2300	16 37	112 02				
2400						



Date 20 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0632 Position: Lat.           , Long.           

Sunset: Time 1839 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 185

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0430 - 550      1
2. 1100    1400      3
3. 1910    2045      15    7
4.
5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			36	10		
0300						
0400						
0500	17 26	112 01				
0600	17 28	01				
0700	37	00				
0800	46	59				
0900	55	58				
1000	04	57				
1100	18 13	111 56				
1200						
1300						
1400	18 13	56				
1500	24	58				
1600	18 35	112 00				
1700	44	01				
1800	53	01				
1900	19 02	112 04				
2000	19 04	112 05				
2100						
2200	19 14	112 10				
2300						
2400						



Date 21-March-67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0632 Position: Lat.       , Long.       

Sunset: Time 1839 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 158 244

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100			35	07		
0200			35	10		
0300						
0400						
0500						
0600	19 46					
0700	19 56	112 23				
0800	20 06	25				
0900	16	27				
1000	26	29				
1100	36	31				
1200	20 46	112 33	24	37		
1300	55	35				
1400	21 05	38				
1500	21 14	40				
1600	24	43				
1700	33	45				
1800	43	48				
1900	52	50				
2000	22 02	53				
2100	11	55				
2200	21	58				
2300	30	113 00				
2400	40	03				



Date 22 March 67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0632 Position: Lat.           , Long.           

Sunset: Time 1839 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 244

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100	22 49	113 05	35	10		
0200	59	08				
0300	23 08	11				
0400	18	14				
0500	27	16				
0600	37	19				
0700	46	21				
0800	56	24				
0900	24 05	26				
1000	15	29				
1100	24	33				
1200	24 33	113 37				
1300	43	39				
1400	52	42				
1500	25 02	44				
1600	11	47				
1700	21	49				
1800	30	52				
1900	40	55				
2000	49	57				
2100	59					
2200						
2300						
2400						



Date 2-7-67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX    TYPE OF FIX    LATITUDE    LONGITUDE

1.

2.

3.

4.

5.

*Station 12*

Hourly Positions:

Time    Latitude    Longitude    Wind Dir.    Wind Sp.    Wave Dir.    Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						
1800						
1900						
2000						
2100						
2200	31° 32' S	112° 16' W				
2300	31° 45' S	112° 01' W				
2400	31° 36' S	111° 58' W				



Date 2-8-67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX    TYPE OF FIX    LATITUDE    LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time    Latitude    Longitude    Wind Dir.    Wind Sp.    Wave Dir.    Wave Hgt.

0100	31° 14.9'	116° 55.4'				
0200	31 13.5	116° 50.9'				
0300	31° 01.8'	116° 47'				
0400	30° 44.8'	116° 43.8'				
0500						
0600	30° 21'	116° 33'				
0700	30 12	30				
0800	30 03	27				
0900	29 54	23				
1000	29 45	20				
1100	29 36	17				
1200	29° 27.0'	116° 13.8'				
1300	29 20	116 11				
1400	29 11.5'	116° 7.5'				
1500	29° 2.5'	116° 4.0'				
1600	28 51	01				
1700	28 44.5	115° 52.8'				
1800	28° 32.5'	115° 52.1'		R.F.	1 mile	W
1900	28 26	50				
2000	28° 18.5'	115° 48.4'				
2100	28° 5.3'	115° 46'		R.F.	1 mile NW	
2200	27° 58'	115° 44.5'		R.F.	1 mile W 1.5 mile N	
2300	27° 46'	115° 41.5'				
2400	27° 36.1'	115° 38.5'				



Date 2-9-67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

# Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100	25°29.6'	115°36'				
0200	27°18.7'	115°33.5'				
0300	27°7.6'	115°30.6'				
0400	26°56'	115°27.8'				
0500	26°43.8'	115°26.4'				
0600	26°38.3'	115°25.1'				
0700	26°29.4'	115°23.3'				
0800	26°20.8'	115°21.5'				
0900	26°8.8'	115°18'				
1000	26°2.9'	115°17'				
1100	25°49'	115°13.8'				
1200	25°37.5'	115°11.4'				
1300	25°24'	115°8.2'		Sky Fix	1.5 Miles	N 020°
1400	25°16'	115°6.5'				
1500	25°3.5'	115°4.2'				
1600	24°52.3'	115°2'				
1700						
1800	24°29.6'	114°55.5'				
1900	24°17.6'	114°52.2'				
2000	24°07.8'	114°49.8'				
2100	23°54.7'	114°47.5'				
2200	23°47.5'	114°45.0'				
2300	23°36.0'	114°43.5'				
2400	23°26.0'	114°40.4'				



Date 7-10-67Ship R/V David Starr Jordan ( )Cruise No. 1

Organization \_\_\_\_\_

Recorder \_\_\_\_\_

Sunrise: Time \_\_\_\_\_ Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Sunset: Time \_\_\_\_\_ Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Miles travelled from 0000 hours to sunrise = \_\_\_\_\_

Miles travelled from sunrise to sunset = \_\_\_\_\_

Miles travelled from sunset to 2400 hours = \_\_\_\_\_

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.				
2.				
3.				
4.				
5.				

## Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	23° 26' 6"	114° 49' 0"				
0200	23° 08' 9"	114° 37' 4"				
0300	22° 57' 1"	114° 34' 6"				
0400	22° 47' 5"	114° 32' 5"				
0500	22° 39' 1"	114° 31' 0"				
0600	22° 30' 0"	114° 27' 0"				
0700	22° 22' 1"	114° 25' 1"	SE 22° 21' 8"		114° 22' 8"	1 1/2 miles
0800	22° 09' 1"	114° 23' 5"				1/2
0900	21° 59' 1"	114° 19' 1"				
1000	21° 55' 2"	114° 18' 5"				
1100	21° 38' 1"	114° 15' 5"				
1200	21° 24' 6"	114° 14' 0"	Sun line		2 miles	South
1300	21° 17' 1"	114° 11' 5"				
1400	21° 9' 6"	114° 7' 1"				
1500	20° 51' 4"	114° 05' 0"	Sun line		2 miles	N
1600	20° 43' 1"	114° 02' 1"				
1700	20° 34' 1"	113° 58' 1"				
1800	20° 29' 1"	113° 53' 1"				
1900		113° 52' 1"				
2000	20° 22' 1"	113° 51' 1"				
2100	19° 50' 5"	113° 49' 1"				
2200	19° 37' 1"	113° 45' 5"				
2300	19° 34' 1"	113° 42' 3"				
2400	19° 14' 1"	113° 39' 7"				

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
0100	23° 26' 6"	114° 49' 0"				
0200	23° 08' 9"	114° 37' 4"				
0300	22° 57' 1"	114° 34' 6"				
0400	22° 47' 5"	114° 32' 5"				
0500	22° 39' 1"	114° 31' 0"				
0600	22° 30' 0"	114° 27' 0"				
0700	22° 22' 1"	114° 25' 1"	SE 22° 21' 8"		114° 22' 8"	1 1/2 miles
0800	22° 09' 1"	114° 23' 5"				1/2
0900	21° 59' 1"	114° 19' 1"				
1000	21° 55' 2"	114° 18' 5"				
1100	21° 38' 1"	114° 15' 5"				
1200	21° 24' 6"	114° 14' 0"	Sun line		2 miles	South
1300	21° 17' 1"	114° 11' 5"				
1400	21° 9' 6"	114° 7' 1"				
1500	20° 51' 4"	114° 05' 0"	Sun line		2 miles	N
1600	20° 43' 1"	114° 02' 1"				
1700	20° 34' 1"	113° 58' 1"				
1800	20° 29' 1"	113° 53' 1"				
1900		113° 52' 1"				
2000	20° 22' 1"	113° 51' 1"				
2100	19° 50' 5"	113° 49' 1"				
2200	19° 37' 1"	113° 45' 5"				
2300	19° 34' 1"	113° 42' 3"				
2400	19° 14' 1"	113° 39' 7"				



Date 2-11-67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.				
2.				
3.				
4.				
5.				

Hourly Positions:

Time Latitude Longitude <sup>Ship</sup>Wind Dir. <sup>Ship</sup>Wind Sp. Wave Dir. Wave Hgt.

0100	19° 47'	113° 38.5'	7	10		
0200	19° 36.2'	113° 35'				
0300	18° 42'	113° 32'				
0400						
0500	18° 25.8'	113° 28.2'				
0600	18° 21.2'	113° 25.8'	6-08	22-45 F	18	NW
0700	18 11	23				
0800	18° 1	113° 20.5'				
0900	17° 52'	113 18				
1000	43	16				
1100	34	14				
1200	17 24	113 11				
1300	13	09				
1400	03	07				
1500	16 52	05				
1600	42	03				
1700	30 1	01				
1800	16 20	112° 57'				
1900	17	54				
2000	54	51				
2100	15 41	112 48				
2200	30	48				
2300	20	40				
2400	15 09	112 36				



Date 17 Feb Ship ( ) Cruise No.         
 Organization                      Recorder                     

Sunrise: Time                      Position: Lat.                     , Long.                     

Sunset: Time                      Position: Lat.                     , Long.                     

Miles travelled from 0000 hours to sunrise =                     

Miles travelled from sunrise to sunset =                     

Miles travelled from sunset to 2400 hours =                     

} 253107

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
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1.	0000	15 09	112 36	
----	------	-------	--------	--

2.

3.

4.

5.

# Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp. <sup>Shp</sup>	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	-------------------------	-----------	-----------

0100	14 59	36		11		
0200	14 50	35				
0300	14 40	112 35				
0400	30	33				
0500	20	31				
0600	14 10	112 29				
0700	14 00	26				
0800	13 50	23				
0900	13 40	112 20				
1000	13 30	17				
1100	13 20	14				
1200	13 17	112 11				
1300	13 05	09				
1400	12 53	07				
1500	12 41	112 04				
1600	12 31	02				
1700	12 21	01				
1800	12 12	111 00				
1900	12 20	111 51				
2000	12 27	111 42		00		
2100	12 27	111 42				
2200	12 27	111 42				
2300	12 27	111 42				
2400	12 27	111 42				



Date Feb 13 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
Miles travelled from sunrise to sunset =            } 167  
Miles travelled from sunset to 2400 hours =           

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100	12 27			0		
0200	12 27					
0300	12 27					
0400	12 36	111 30				
0500	12 46			10		
0600	12 56	111 04				
0700	13 01	111 01				
0800	13 07	110 58				
0900	13 12	110 55				
1000	13 18	110 52				
1100	13 23	110 48		9		
1200						
1300	13 23	110 48				
1400	37	110 42		10		
1500	32	110 36				
1600	28	110 30				
1700	44	110 24				
1800	50	110 18				
1900	13 51	110 15		9		
2000	13 51	110 15				
2100				10		
2200						
2300	14 15	109 50				
2400						



Date 14 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

           TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4.

5.

152 mi

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      <sup>Ship</sup>Wind Sp.      Wave Dir.      Wave Hgt.

0100	14 15	109 50		7		
0200	14 15	109 50				
0300	14 19					
0400	28					
0500	37					
0600	14 46	109 24				
0700	51	109 20				
0800	56	109 16				
0900	15 01	109 12				
1000	15 07	109 02				
1100	15 09	108 55				
1200	15 09	108 55				
1300	15 09	108 55				
1400	15 09	108 55				
1500	16	48				
1600	23	41				
1700	15 30	108 34				
1800	15 33	108 30				
1900	15 33	108 30				
2000						
2100						
2200	15 54	108 08				
2300						
2400						

1045  
/

1405

1715  
1

1910

9245



Date 15 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 132

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1.

2.

3.

4.

5.

Handwritten calculations and notes:

- 75
- 3.7
- 254
- 210
- 185
- 32
- 132
- 276
- 56
- 240
- 3.8
- 17:00
- 170
- 200

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100						
0200						
0300						
0400						
0500						
0600	16 15	107 50				
0700	1	1				
0720	16 19	47				
0800	16 27	37				
0900	16 35	27				
1000	16 43	107 18				
1100						
1200						
1300						
1400	16 43	107 18				
1500	49	11				
1600	54	03				
1700	17 00	56				
1725	17 02	106 49				
1800	17 02	106 49				
1850	17 02	106 49				
1900	17 02	106 49				
2000	17 02	106 49				
2100	17 02	106 49				
2200	17 23	106 17				
2300						
2400						



Date 16 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 162

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2.

3.

4. 0830 1809 105 24

5.

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200						
0300	<u>17 38</u>	<u>105 56</u>				
0400	<u>44</u>	<u>46</u>				
0500	<u>17 54</u>	<u>105 37</u>				
0600	<u>1</u>	<u>1</u>				
0700	<u>17 58</u>	<u>105 32</u>				
0800	<u>18 05</u>	<u>26</u>				
0900	<u>18 12</u>	<u>20</u>				
1000	<u>18 19</u>	<u>14</u>				
1100	<u>18 25</u>	<u>105 09</u>				
1200						
1300						
1400						
1500	<u>18 25</u>	<u>105 09</u>				
1600	<u>31</u>	<u>01</u>				
1700	<u>37</u>	<u>53</u>				
1800	<u>43</u>	<u>45</u>				
1900	<u>47</u>	<u>37</u>				
2000	<u>18 56</u>	<u>104 30</u>				
2100						
2200						
2300						
2400						

0635

✓

1915  
2040



Date 20 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0607 Position: Lat.       , Long.       

Sunset: Time 1753 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

TIME OF FIX TYPE OF FIX LATITUDE LONGITUDE

- 1.
2. 0530-655 1530 101 06
3. 1730 1850 14 29 101 08
4. 2200-0110
- 5.

1636 100 07

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600	<u>15 30</u>	<u>101 06</u>				
0700	<u>15 29</u>	<u>101 06</u>				
0800	<u>15 21</u>	<u>15</u>				
0900	<u>15 13</u>	<u>101 24</u>				
1000	<u>15 05</u>	<u>34</u>				
1100	<u>14 56</u>	<u>101 43</u>				
1200						
1300						
1400	<u>14 56</u>	<u>101 43</u>				
1500	<u>53</u>	<u>56</u>				
1600	<u>45</u>	<u>101 54</u>				
1700	<u>37</u>	<u>102 04</u>				
1800	<u>14 29</u>	<u>102 08</u>				
1900	<u>23</u>	<u>07</u>				
2000	<u>18</u>	<u>17</u>				
2100	<u>10</u>	<u>27</u>				
2200	<u>14 03</u>	<u>102 37</u>				
2300						
2400						



Date 21 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0612 Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX TYPE OF FIX LATITUDE LONGITUDE

1.

2.

3.

4.

5.

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100						
0200						
0300						
0400						
0500	13 36	103 09				
0600	32	14				
0700	28	20				
0800	13 25	103 25				
0900	18	33				
1000	13 10	103 42				
1100						
1200						
1300						
1400	13 01	103 52				
1500	12 52	104 03				
1600	46	13				
1700	12 37	104 23				
1800						
1900	28	28				
2000	23	38				
2100	15	48				
2200	12 07	104 58				
2300						
2400						

0145

0145



Date 22 Feb Ship ( ) Cruise No.         
 Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
 Miles travelled from sunrise to sunset =             
 Miles travelled from sunset to 2400 hours =            } 181

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
1.	0515-0640	1126	104 59	1.25
2.	1045 1335	10 44	105 02	1.45 3
3.				2.10 2.5
4.	2130 0310	9° 32'		3.40
5.				15.10

Hourly Positions:

Time    Latitude    Longitude    Wind Dir.    Wind Sp.    Wave Dir.    Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600	11 26	104 59				
0700	11 23	59				
0800	13	05 00				
0900	03	105 01				
1000	53	02				
1100	10 44	105 02				
1200	10 44					
1300	10 44					
1400	10 36					
1500	10 25	105 02				
1600	10 17					
1700	10 08					
1800	01					
1900	54					
2000	09 47					
2100	37					
2200	09 32					
2300						
2400						



Date 23 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 144

           TIME OF FIX    TYPE OF FIX    LATITUDE    LONGITUDE

1.

2.

3.

4. 1745 1910 7°40

5. 2245 0210-07°02'

Hourly Positions:

Time    Latitude    Longitude    Wind Dir.    Wind Sp.    Wave Dir.    Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600	09 00	105				
0700	08 52					
0800	08 44					
0900	08 36					
1000	08 28					
1100	08 20					
1200						
1300						
1400	08 20					
1500	08 10					
1600	7 59					
1700	07 49					
1800	07 40					
1900	07 40					
2000	30					
2100	07 20					
2200						
2300	07 02					
2400						



Date 24 Feb 67 Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
Miles travelled from sunrise to sunset =            } 175  
Miles travelled from sunset to 2400 hours =           

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0500-0635      -2  
                                 -15

2. 1030 1310      -2.5

3. 1615 1750      -1.5

4.                 -7

5. 2100 0300

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200						
0300	<u>6 52</u>					
0400	<u>40</u>					
0500	<u>6 27</u>					
0600	<u>6 27</u>					
0700	<u>6 23</u>					
0800	<u>6 13</u>					
0900	<u>6 03</u>					
1000	<u>5 53</u>					
1100	<u>5 48</u>					
1200						
1300	<u>5 48</u>					
1400	<u>36</u>					
1500	<u>22</u>					
1600	<u>5 08</u>					
1700	<u>5 04</u>					
1800	<u>02</u>					
1900						
2000						
2100	<u>4 28</u>					
2200						
2300						
2400						



Date 25 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =             
Miles travelled from sunrise to sunset =            } 136  
Miles travelled from sunset to 2400 hours =           

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0600-0720 -3  
2. 1030 1410 -1.5  
3. 1730 1850 3.5  
4. 2200 0045 -1 -11  
5.            -2

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200						
0300						
0400						
0500						
0600	4 06					
0700	4 06					
0800	5 8					
0900	3 47					
1000	3 37					
1100	3 31					
1200						
1300						
1400	3 31					
1500	3 21					
1600	3 07					
1700	2 53					
1800	2 46					
1900						
2000	2 32					
2100	2 21					
2200	2 12					
2300						
2400						



Date 26 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX TYPE OF FIX LATITUDE LONGITUDE

1. -1  
2. 0430 -0600 1.5  
3. 1030, 1430 4  
4. 1630 1750 1.5  
5. 2100 0155 3

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100	<u>N</u>					
0200						
0300	<u>1° 49'</u>	<u>105° 00'</u>				
0400						
0500						
0600	<u>1 35</u>					
0700	<u>25</u>					
0800	<u>15</u>					
0900	<u>1 04</u>					
1000	<u>0 52</u>					
1100	<u>0 46</u>					
1200	<u>1</u>					
1300						
1400						
1500	<u>40</u>					
1600	<u>28</u>					
1700	<u>0 21</u>					
1800	<u>0 18</u>					
1900	<u>0 04</u>					
2000	<u>0 00</u>					
2100	<u>0° 105</u>					
2200						
2300						
2400						



Date 27 Feb Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time            Position: Lat.           , Long.           

Sunset: Time            Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 120

	TIME OF FIX	TYPE OF FIX	LATITUDE	LONGITUDE
--	-------------	-------------	----------	-----------

1.				-2
----	--	--	--	----

2.	545 0715	834's	104°59'	1.5
----	----------	-------	---------	-----

3.	1100 1305	1° 14's	104°58'	3
----	-----------	---------	---------	---

4.	1730	1845	1° 50	105
----	------	------	-------	-----

5.	2200	0010		2
----	------	------	--	---

Hourly Positions:

Time	Latitude	Longitude	Wind Dir.	Wind Sp.	Wave Dir.	Wave Hgt.
------	----------	-----------	-----------	----------	-----------	-----------

0100						
0200						
0300						
0400						
0500						
0600	0 34	104 59				
0700	0 34	104 59				
0800	44					
0900	54					
1000	1 04					
1100	1 14	104 58				
1200						
1300	1 14					
1400	22					
1500	30					
1600	38					
1700	46					
1800	1° 50					
1900						
2000						
2100	2 24	105 00				
2200	2 36	105				
2300						
2400						



Date 28 Feb Ship ( ) Cruise No.

Organization \_\_\_\_\_ Recorder \_\_\_\_\_

Sunrise: Time \_\_\_\_\_ Position: Lat. \_\_\_\_\_, Long. \_\_\_\_\_

Sunset: Time                      Position: Lat.                , Long.

Miles travelled from 0000 hours to sunrise =

Miles travelled from sunrise to sunset =

Miles travelled from sunset to 2400 hours =

[illegible]

1.	0430 - 0605	302'	10500	1.5
2.				3.9
3.	1030 1355	356	10463	1.5
4.	1700 1830			2
5.	2130 0145	4054	10507	

Hourly Positions:

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Wind Dir.</u>	<u>Wind Sp.</u>	<u>Wave Dir.</u>	<u>Wave Hgt.</u>
-------------	-----------------	------------------	------------------	-----------------	------------------	------------------

0100					
0200					
0300	2 50	105 00			
0400					
0500					
0600	3 02	105 60			
0700	14	104 53			
0800	27	104 46			
0900	3 39	104 39			
1000	49	49			
1100	3 56	104 53			
1200					
1300					
1400	3 57	53			
1500	4 06	104 56			
1600	4 15	105 06			
1700	4 24	06			
1800	4 24	06			
1900	28	06			
2000	36	07			
2100	44	37			
2200	40 54	105 07			
2300					
2400					



Date 1 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0606 Position: Lat.       , Long.       

Sunset: Time 1820 Position: Lat.       , Long.       

Miles travelled from 0000 hours to sunrise =       

Miles travelled from sunrise to sunset =       

Miles travelled from sunset to 2400 hours =       

} 137

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1. 0600-0720
2. 1100-1300
3. 1700-1825
4. 2230 0030 7°32' 104°59'

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100			18	11		
0200						
0300						
0400	05 17	105 07				
0500	27					
0600	05 37	105 07				
0700	37	07				
0800	05 43	06				
0900	05 53	05				
1000	06 03	06				
1100	06 13	105 05				
1200		05				
1300	06 13	105 05				
1400	23	04				
1500	06 32	105 04				
1600	42	03				
1700	06 52	105 02				
1800						
1900						
2000						
2100						
2200						
2300						
2400						



Date 2 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0605 Position: Lat.           , Long.           

Sunset: Time 1820 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

} 165

TIME OF FIX      TYPE OF FIX      LATITUDE      LONGITUDE

1.

2. 0430 - 0620 8°12' 104 57

3. 1030 - 1240 8 58 104 54

4. 1730 1845 9 42 104 50

5. 2130 - 0215 10° 08 104 47

Hourly Positions:

Time      Latitude      Longitude      Wind Dir.      Wind Sp.      Wave Dir.      Wave Hgt.

0100						
0200			18	11		
0300						
0400						
0500						
0600	8 12	104 57				
0700	8 16					
0800	8 27	56				
0900	38	56				
1000	49	55				
1100	08 58	104 54				
1200	58					
1300	01	57				
1400	10	53				
1500	19	57				
1600	28	57				
1700	37	51				
1800	9 42	104 50				
1900						
2000						
2100						
2200	10 08	104 47				
2300						
2400						



Date 3 March Ship ( ) Cruise No.       

Organization                      Recorder                     

Sunrise: Time 0604 Position: Lat.           , Long.           

Sunset: Time 1821 Position: Lat.           , Long.           

Miles travelled from 0000 hours to sunrise =           

Miles travelled from sunrise to sunset =           

Miles travelled from sunset to 2400 hours =           

TIME OF FIX TYPE OF FIX LATITUDE LONGITUDE

1. 0600 - 0720

2.

3. 1100 / 335

4. 1720 - 1840 12° 00' 104° 58'

5. 2200 0035

Hourly Positions:

Time Latitude Longitude Wind Dir. Wind Sp. Wave Dir. Wave Hgt.

0100			18	11		
0200						
0300						
0400	10 24	104 46				
0500						
0600	10 44	104 44				
0700	44	44				
0800	50	43				
0900	01	47				
1000	02	49				
1100	11 23	104 51				
1200						
1300	11 23	104 51				
1400	27	53				
1500	11 35	104 59				
1600	45	59				
1700	55	51				
1800	12 00	104 58				
1900						
2000						
2100						
2200	12 20	104 57				
2300						
2400						



NAME OF VESSEL S/S M/V D.S. JORDAN						NAME OF CAPTAIN								WB FORM 615-5 (8-63)				U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU				INSTRUCTIONS																						
COUNTRY OF REGISTRY					CALL SIGN		V O Y A G E		FROM EASTROPAL				SHIP'S WEATHER OBSERVATIONS																1. Begin a new sheet: a. For the first observation of a new month. b. At the beginning of each voyage. c. Upon sailing from one octant to another. d. Upon sailing from one ocean to another. 2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.) 3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.															
MONTH February 1967					BAROMETER NO.				TO				Check (✓) TEMPERATURES (COLS. 16-18, 28-30, 32-33): °C °F																Code the message in accordance with the "International Weather Code for Ships." 4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided. 5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.															
DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISI-BILITY (Coded) (0-99)	WEATHER		PRESSURE		AIR TEMP. (Rounded)	TEMPERA-TURE		CLOUDS (Coded)				3-HOUR PRESSURE TENDENCY		TEMPERATURE			DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)								REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30½ ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS						
		OCT. ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGI-TUDE			DIRE-CTION (True) (00-36)	SPEED (Trace-knots) EST MEAS <input type="checkbox"/>		PRES-ENT (Coded) (00-99)	PAST (Coded) (0-9)	CORREC-TION	DATE COMPARED		BAROME-TER AS READ (in., mb., or mm.)	BAROMETER CORRECTED (mb.)	CODED Sea Level (mb.)	DRY BULB	WET BULB	AMOUNT OF LOW CLOUD	TYPE C <sub>L</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>H</sub> (0-9)	TYPE C <sub>M</sub> (0-9)	COURSE OF SHIP (0-9)			SPEED OF SHIP (0-9)	CHARACTERISTIC (0-9)	AMOUNT OF CHANGE (mb. and tenths)	SEA WATER	DIFF. AIR-SEA (-if air colder than sea)	DEW POINT	INDICATOR	INDICATOR				DIRECTION (00-36)	PERIOD (Coded)	HEIGHT (Coded)	INDICATOR	DIRECTION (00-36)	PERIOD (Coded)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
—	Y	Q	L <sub>a</sub> L <sub>b</sub> L <sub>c</sub>	L <sub>d</sub> L <sub>e</sub> L <sub>f</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>s</sub>	v <sub>s</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—	
					00																								0			1												
9	5	1	22.8	157	06	2	06	07	99	02	0	3014			16												18.0			0			1	33		2	1							
9		/	26.7	156	12	0	36	10	99	02	0	3008			18												18.2			0			1	33		2	1							
9			25.8	152	18	2	04	10	99	02	0	3013			20												18			0			1	33		2	1							
10			24.7	158	<del>24</del> 00	0	33	10	99	02	0	3004			23												19.2			0			1	33		2	1							
10			23.6	147	06	0	33	10	99	02	0	3005			18												19.4			0			1	33		2	1							
10					12	0	41	10	99	02	0	3005			19												20.7			0			1	33		2	1							
10					18	0	03	07	99	02	0	3005			21												21.9			0			1	31		2	1							
11					<del>24</del> 00	1	05	16	99	02	0	2995			20												22.3			0			1	31										



WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
SHIP'S WEATHER OBSERVATIONS			
NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V		CALL SIGN	
MAILING ADDRESS ( <i>American addresses preferred</i> )      			
CHECK FORMS OR SUPPLIES REQUIRED  <input type="checkbox"/> SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5 <input type="checkbox"/> METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9 <input type="checkbox"/> BAROGRAM, WB FORM 455-12  WEATHER MAP BASES <input type="checkbox"/> N. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> N. PACIFIC - U.S. INTERCOASTAL <input type="checkbox"/> S. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> S. PACIFIC - INDIAN OCEAN <input type="checkbox"/> WEATHER SERVICE FOR MERCHANT SHIPPING <input type="checkbox"/> ENVELOPES			
INSTRUMENTS IN NEED OF SERVICE  <input type="checkbox"/> BAROMETER <input type="checkbox"/> BAROGRAPH <input type="checkbox"/> PSYCHROMETER			
DO NOT WRITE BELOW			
RECEIVED ( <i>Weather Bureau Office</i> )   			
ACTION TAKEN ( <i>Check one</i> )  <input type="checkbox"/> SUPPLIES FURNISHED AS MARKED X <input type="checkbox"/> ACKNOWLEDGED  <input type="checkbox"/> ALL ACTION REFERRED TO CENTRAL OFFICE			
DATE ACTION TAKEN			



NAME OF VESSEL  

☐ S/S  
☐ M/V

D.S. JORDAN

COUNTRY OF REGISTRY

MONTH  
Feb

NAME OF CAPTAIN

FROM

TO

WB FORM 615-5  
(8-63)

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

SHIP'S WEATHER OBSERVATIONS

Check (✓)  
TEMPERATURES (COLS. 16-18, 28-30, 32-33):  

☐ °C  
☐ °F

INSTRUCTIONS

1. Begin a new sheet:  
a. For the first observation of a new month.  
b. At the beginning of each voyage.  
c. Upon sailing from one octant to another.  
d. Upon sailing from one ocean to another.

2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.)

3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.

Code the message in accordance with the "International Weather Code for Ships."  
4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided.  
5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.

DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISI- BILITY (Coded) (90-99)	WEATHER		PRESSURE		AIR TEMP. (Round- ed)	TEMPERA- TURE		CLOUDS (Coded)					3-HOUR PRESSURE TENDENCY		TEMPERATURE			DIFF. AIR- SEA (Coded)	DEW POINT (Round- ed)	WAVES (Make 2 entries if 2nd pattern observed)				REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30½ ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS										
		OCT- ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGI- TUDE (Degrees and tenths)			DI- REC- TION (True) (00-36)	SPEED (True- knots) EST. MEAS □		PRES- ENT (Coded) (00-99)	PAST (Coded) (0-9)	CORREC- TION BAROME- TER AS READ (in .mb., or mm.)	DATE COMPARED BAROMETER CORRECTED (mb.)		CORRECTION Sea Level (mb.)	DRY BULB (Degrees and tenths)	WET BULB (Degrees and tenths)	AMOUNT OF LOW CLOUD	TYPE C <sub>1</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>2</sub> (0-9)	TYPE C <sub>3</sub> (0-9)	COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	CHARACTERISTIC (0-9)	AMOUNT OF CHANGE (mb. and tenths)			SEA WATER (Degrees and tenths)	DIFF. AIR-SEA (-if air colder than sea)	DEW POINT (Whole degrees)	INDICATOR				SEA/SWELL INDICATOR (00-36)	DIRECTION (Coded)	PERIOD (Coded)	HEIGHT (Coded)	INDICATOR	DIRECTION (00-36)	PERIOD (Coded)	HEIGHT (Coded)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
—	Y	Q	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>h</sub>	C <sub>1</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	vs	a	pp	—	—	—	0	T <sub>S</sub> T <sub>S</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—		
14		1			00	7	04	12	98	03	2	2987		25														262			0			1	33		2	1							
		1			06	5	08	15	98	02	1	2993		26														265			0			1	08		3	1							
14		1			12	2	06	10	98	02	0	2994		26														259			0			1	06		3	1							
14		1			18	2	06	15	98	02	1	2998		26														281			0			1	06		3	1							
15		1			00	1	07	15	99	03	0	2990		26														259			0			1	09		2	1							
15		1			06	0	03	12	99	02	0	3004		25														253			0			1	03		2	1							
					12																										0			1											
					18	0	03	12	99	02	0	2993		24																	0			1											
16		1			00																							252			0			1	03		2	1							
					06																										0			1											
16					12	0	35	12	99	02	0	2990		23														254			0			1	04		2	1							
16		1			18	4	32	07	98	03	0	2995		25														26			0			1	02		2	1							
		1			00																										0			1											
		1			06																										0			1											
		1			12																										0			1											
20		1			18	3	33	05	99	02	0	2997		23														276			0			1	31		2	1							
21					00	1	36	06	99	02	0	2987		26														276			0			1	36		2	1							
21					06	0	00	00	99	02	0	2993		26														278			0			1	33		1	1							
21					12	4	03	05	99	02	0	2997		27														276			0			1	31		2	1							
22					18	5	34	02	99	03	0	2983		28														262			0			1	32		3	1							
1	Y	Q	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>h</sub>	C <sub>1</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	vs	a	pp	—	—	—	0	T <sub>S</sub> T <sub>S</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—		



SHIP'S WEATHER OBSERVATIONS

NAME OF VESSEL

☐ S/S

☐ M/V

CALL SIGN

MAILING ADDRESS (*American addresses preferred*)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CHECK FORMS OR SUPPLIES REQUIRED

☐

SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5

☐

METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9

☐

BAROGRAM, WB FORM 455-12

WEATHER MAP BASES

☐

N. ATLANTIC - U.S. INTERCOASTAL

☐

N. PACIFIC - U.S. INTERCOASTAL

☐

S. ATLANTIC - U.S. INTERCOASTAL

☐

S. PACIFIC - INDIAN OCEAN

☐

WEATHER SERVICE FOR MERCHANT SHIPPING

☐

ENVELOPES

INSTRUMENTS IN NEED OF SERVICE

☐

BAROMETER

☐

BAROGRAPH

☐

PSYCHROMETER

DO NOT WRITE BELOW

RECEIVED (*Weather Bureau Office*)

ACTION TAKEN (*Check one*)

☐

SUPPLIES FURNISHED AS MARKED X

☐

ACKNOWLEDGED

☐

ALL ACTION REFERRED TO CENTRAL OFFICE

DATE ACTION TAKEN



NAME OF VESSEL  
☐ S/S  
☐ M/V **D.S. JORDAN**

COUNTRY OF REGISTRY

MONTH **February** 19 **67**

NAME OF CAPTAIN

FROM

TO

WB FORM 615-5  
(8-63)

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

SHIP'S WEATHER OBSERVATIONS

Check (✓)  
TEMPERATURES (COLS. 16-18, 28-30, 32-33):  
☐ °C ☐ °F

INSTRUCTIONS

1. Begin a new sheet:  
a. For the first observation of a new month.  
b. At the beginning of each voyage.  
c. Upon sailing from one ocean to another.  
d. Upon sailing from one ocean to another.

2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.)

3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.

4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided.

5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.

DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISI- BILITY (Coded) (0-9)	WEATHER		PRESSURE		AIR TEMP. (Rounded)	TEMPERA- TURE		CLOUDS (Coded)					3-HOUR PRESSURE TENDENCY		TEMPERATURE			DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)				REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30½ ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS									
		OCT. ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGI- TUDE			DI- REC- TION (True) (00-36)	SPEED (True) (00-36) MEAS ☐ EST ☐		PRES- ENT (Coded) (00-99)	PAST (Coded) (0-9)	CORREC- TION BAROME- TER AS READ (in. mb. or mm.)	DATE COMPARED BAROMETER CORRECTED (mb.)		Coded Sea Level (mb.)	DRY BULB	WET BULB	AMOUNT OF LOW CLOUD	TYPE C <sub>L</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>M</sub> (0-9)	TYPE C <sub>H</sub> (0-9)	COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	CHARACTERISTIC (0-9)	AMOUNT OF CHANGE (mb. and tenths)			SEA WATER (Degrees and tenths)	DIFF. AIR-SEA (- if air colder than sea)	DEW POINT (Whole degrees)	SEA/SWELL				SWELL								
																																INDICATOR				DIRECTION (00-36)	PERIOD (Coded)	HEIGHT (Coded)	INDICATOR	DIRECTION (00-36)	PERIOD (Coded)	HEIGHT (Coded)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
—	Y	Q	L <sub>a</sub> L <sub>b</sub> L <sub>c</sub>	L <sub>o</sub> L <sub>o</sub> L <sub>o</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	vs	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—	
22		1			00	1	06	08	99	02	0	2990			26												274			0			1	33		2	1							
22		1			06	4	16	08	99	02	0	2994			28												271			0			1	34		2	1							
23		1			12	1	06	08	99	02	0	2981			28												272			0			1	08		2	1							
23		1			18	6	03	09	99	02	0	2985			26												271			0			1	24		2	1							
23		1			00	2	06	12	99	02	0	2991			28												269			0			1	15		2	1							
24		1			06	5	15	08	97	02	1	2978			30												270			0			1	15		2	1							
24		1			12	3	25	16	98	02	0	2988			26												266			0			1	05		4	1							
24		1			18	2	07	14	98	02	0	2988			28												265			0			1	07		4	1							
25		1			00	2	07	14	98	02	0	2986			26												264			0			1	07		4	1							
25		1			06	1	07	14	98	02	0	2980			26												262			0			1	07		4	1							
25		1			12	2	06	12	97	02	1	2981			26												265			0			1	07		3	1							
26		1			18	3	06	09	98	01	0	2976			24												258			0			1	07		3	1							
26		1			00	7	17	06	98	16	1	2987			25												266			0			1	17		3	1							
26		1			06	4	17	05	98	16	5	2980			25												264			0			1	02		3	1							
26		1			12	4	20	00	98	02	1	2989			26												261			0			1	49		2	1							
27		1			18	7	27	03	98	20	2	2978			26												285			0			1	02		4	1							
27		6			00	3	20	08	98	02	1	2978			25												251			0			1				1							
27		6			06	8	20	06	98	03	2	2984			25												251			0			1	49		2	1							
28		6			12	8	30	25	97	03	2	2978			26												270			0			1	16		3	1							
28		6			18	3	16	08	98	02	1	2987			26												259			0			1	49		3	1							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
—	Y	Q	L <sub>a</sub> L <sub>b</sub> L <sub>c</sub>	L <sub>o</sub> L <sub>o</sub> L <sub>o</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	vs	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—	



SHIP'S WEATHER OBSERVATIONS

NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V	CALL SIGN
--	-----------

MAILING ADDRESS (*American addresses preferred*)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CHECK FORMS OR SUPPLIES REQUIRED

☐ SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5  
☐ METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9  
☐ BAROGRAM, WB FORM 455-12

WEATHER MAP BASES

☐ N. ATLANTIC - U.S. INTERCOASTAL  
☐ N. PACIFIC - U.S. INTERCOASTAL  
☐ S. ATLANTIC - U.S. INTERCOASTAL  
☐ S. PACIFIC - INDIAN OCEAN  
☐ WEATHER SERVICE FOR MERCHANT SHIPPING  
☐ ENVELOPES

INSTRUMENTS IN NEED OF SERVICE

☐ BAROMETER      ☐ BAROGRAPH      ☐ PSYCHROMETER

DO NOT WRITE BELOW

RECEIVED (*Weather Bureau Office*)

\_\_\_\_\_

ACTION TAKEN (*Check one*)

☐ SUPPLIES FURNISHED AS MARKED X      ☐ ACKNOWLEDGED  
☐ ALL ACTION REFERRED TO CENTRAL OFFICE

DATE ACTION TAKEN

\_\_\_\_\_



NAME OF VESSEL  

☐ S/S  
☐ M/V

D.S. JORDAN

COUNTRY OF REGISTRY

MONTH  
1907

NAME OF CAPTAIN

FROM

TO

WB FORM 615-5  
(8-63)

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

SHIP'S WEATHER OBSERVATIONS

Check (✓)  
TEMPERATURES (COLS. 16-18, 28-30, 32-33):  

°C

°F

- INSTRUCTIONS
1. Begin a new sheet:  
a. For the first observation of a new month.  
b. At the beginning of each voyage.  
c. Upon sailing from one ocean to another.  
d. Upon sailing from one ocean to another.

2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.)

3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.

4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided.

5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.
- Code the message in accordance with the "International Weather Code for Ships."

DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISI-BILITY (Coded) (0-99)	WEATHER		PRESSURE		AIR TEMP. (Rounded)	TEMPERA-TURE		CLOUDS (Coded)				COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	3-HOUR PRESSURE TENDENCY		TEMPERATURE			INDICATOR	DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)				REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30½ ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS							
		OCT. ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGI-TUDE			DI-REC-TION (00-36)	SPEED (True-knots) EST. ☐ MEAS ☐		PRES-ENT	PAST	CORREC-TION	DATE COMPARED		DRY BULB	WET BULB	AMOUNT OF LOW CLOUD	TYPE C <sub>1</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>2</sub> (0-9)			TYPE C <sub>3</sub> (0-9)	CHARACTERISTIC (0-9)	AMOUNT OF CHANGE (mb. and tenths)	SEA WATER (Degrees and tenths)	DIFF. AIR-SEA (- if air colder than sea)				DEW POINT (Whole degrees)	SEA/SWELL		SWELL										
																																BAROME-TER AS READ (in., mb., or mm.)	BAROMETER CORRECTED (mb.)	SEA Level (mb.)				INDICATOR (00-36)	DIRECTION (Coded)	PERIOD (Coded)	HEIGHT (Coded)	INDICATOR (00-36)	DIRECTION (Coded)	PERIOD (Coded)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
—	Y	Q	L <sub>3</sub> L <sub>2</sub> L <sub>1</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—	
					00																																							
					06																																							
28					12	1	15	08	99	02	0	2977			26												258				0			1	15	3	1							
29					18	7	15	12	99	02	1	2985			27												261				0			1	49	4	1							
1					00	8	15	11	99	03	2	2973			28												264				0			1	16	4	1							
1					06	8	15	12	99	03	2	2984			25												262				0			1	49	4	1							
1					12	8	15	11	99	00	2	2975			24												258				0			1	15	4	1							
1					18	8	13	10	99	14	2	2984			26												256				0			1	14	4	1							
2					00	8	13	13	99	03	2	2972			26												25				0			1	14	4	1							
2					06	9	13	17	98	18	2	2985			25												258				0			1	14	5	1							
					12																																							
2					18	7	14	17	98	01	1	2987			26												253				0			1	14	5	1							
3					00	3	17	17	98	01	0	2977			28												255				0			1	14	4	1							
3					06	0	19	15	99	02	0	2987			25												253				0			1	14	4	1							
3					12	6	14	14	99	02	2	2982			24												253				0			1	14	4	1							
3					18	7	14	12	99	03	2	2990			25												249				0			1	14	3	1							
4					00	6	14	13	99	03	0	2980			28												278				0			1	14	3	1							
4					06	4	13	15	98	02	1	2993			24												255				0			1	14	3	1							
4					12	3	11	15	99	02	1	2989			23												264				0			1	14	3	1							
4					18	6	11	15	99	02	1	2995			24												238				0			1	11	3	1							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
—	Y	Q	L <sub>3</sub> L <sub>2</sub> L <sub>1</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—	



WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
SHIP'S WEATHER OBSERVATIONS			
NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V		CALL SIGN	
MAILING ADDRESS ( <i>American addresses preferred</i> )      			
CHECK FORMS OR SUPPLIES REQUIRED  <input type="checkbox"/> SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5 <input type="checkbox"/> METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9 <input type="checkbox"/> BAROGRAM, WB FORM 455-12  WEATHER MAP BASES <input type="checkbox"/> N. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> N. PACIFIC - U.S. INTERCOASTAL <input type="checkbox"/> S. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> S. PACIFIC - INDIAN OCEAN <input type="checkbox"/> WEATHER SERVICE FOR MERCHANT SHIPPING <input type="checkbox"/> ENVELOPES			
INSTRUMENTS IN NEED OF SERVICE  <input type="checkbox"/> BAROMETER <input type="checkbox"/> BAROGRAPH <input type="checkbox"/> PSYCHROMETER			
DO NOT WRITE BELOW			
RECEIVED ( <i>Weather Bureau Office</i> )   			
ACTION TAKEN ( <i>Check one</i> )  <input type="checkbox"/> SUPPLIES FURNISHED AS MARKED X <input type="checkbox"/> ACKNOWLEDGED  <input type="checkbox"/> ALL ACTION REFERRED TO CENTRAL OFFICE			
DATE ACTION TAKEN			



NAME OF VESSEL  
S/S  
M/V **D.S. JORDAN**

COUNTRY OF REGISTRY

MONTH  
**March** 19**67**

NAME OF CAPTAIN

FROM

TO

WB FORM 615-5  
(8-63)

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

SHIP'S WEATHER OBSERVATIONS

INSTRUCTIONS

1. Begin a new sheet:  
a. For the first observation of a new month.  
b. At the beginning of each voyage.  
c. Upon sailing from one octant to another.  
d. Upon sailing from one ocean to another.  
2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.)  
3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.

Code the message in accordance with the "International Weather Code for Ships."  
4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided.  
5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.

DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISIBILITY (Coded) (0-9)	WEATHER		PRESSURE		AIR TEMP. (Rounded)	TEMPERATURE		CLOUDS (Coded)				COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	3-HOUR PRESSURE TENDENCY (0-9)	TEMPERATURE			DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)				REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30 1/2 ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS										
		OCTANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGITUDE (Degrees and tenths)			DIRECTION (True) (00-36)	SPEED (True) (00-36)		PRES-ENT (Coded) (0-9)	PAST (Coded) (0-9)	CORRECTION BAROMETER AS READ (m. mb. or mm.)	DATE COMPARED BAROMETER CORRECTED (mb.)		DRY BULB (Degrees and tenths)	WET BULB (Degrees and tenths)	AMOUNT OF LOW CLOUD	TYPE C <sub>L</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>M</sub> (0-9)	TYPE C <sub>H</sub> (0-9)			AMOUNT OF CHANGE (mb. and tenths)	SEA WATER (Degrees and tenths)	DIFF. AIR-SEA (- if air colder than sea) (Whole degrees)	DEW POINT (Whole degrees)		SEA/SWELL INDICATOR (00-36) (Coded)	DIRECTION (Coded)	PERIOD (Coded)	HEIGHT (Coded)													
		1	2	3			4	5		6	7	8	9		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
—	Y	Q	L <sub>1</sub> L <sub>2</sub> L <sub>3</sub>	L <sub>4</sub> L <sub>5</sub> L <sub>6</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>h</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—		
5		6			00	5	10	17	98	03	1	2990			250											240			0			1	10		2	1									
5		6			06	7	11	17	98	03	1	2995			233											237			0			1	11		2	1									
5		6			12	8	12	22	98	02	3	2989			231											238			0			1	12		3	1									
5		6			18	8	12	20	98	16	2	3000			232											237			0			1	12		3	1									
6		6			00	8	13	17	98	16	2	2992			237											239			0			1	12		3	1									
6		6			06	8	10	15	98	02	2	3002			238											240			0			1	10		3	1									
6		6			12	8	10	18	98	18	2	2997			222											236			0			1	10		3	1									
6		6			18	1	10	14	98	01	1	3004			249											237			0			1	10		4	1									
7		6			00	8	10	18	98	15	1	2996			238											240			0			1	10		4	1									
7		6			06	1	10	12	98	01	0	3004			240											238			0			1	10		4	1									
7		6			12	7	10	13	98	18	2	2998			230											238			0			1	10		4	1									
7		6			18	5	14	15	98	16	2	3004			255											240			0			1	14		3	1									
8		6			00	7	13	13	98	03	2	2990			238											242			0			1	14		4	1									
8		6			06	8	10	14	98	02	2	2998			245											242			0			1	10		4	1									
8		6			12	7	10	14	98	18	2	2992			230											240			0			1	10		4	1									
8		6			18	2	13	15	98	01	1	2996			250											243			0			1	13		4	1									
9		6			00	3	13	15	98	02	1	2985			246											244			0			1	13		4	1									
9		6			06	1	12	17	98	03	0	2992			240											245			0			1	12		4	1									
9		6			12	1	12	15	98	02	0	2983			242											249			0			1	12		3	1									
9		6			18	2	12	15	98	02	0	2990			253											251			0			1	12		3	1									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
—	Y	Q	L <sub>1</sub> L <sub>2</sub> L <sub>3</sub>	L <sub>4</sub> L <sub>5</sub> L <sub>6</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>h</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>s</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—		



WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
SHIP'S WEATHER OBSERVATIONS			
NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V		CALL SIGN	
MAILING ADDRESS ( <i>American addresses preferred</i> )       			
CHECK FORMS OR SUPPLIES REQUIRED  <input type="checkbox"/> SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5 <input type="checkbox"/> METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9 <input type="checkbox"/> BAROGRAM, WB FORM 455-12  WEATHER MAP BASES <input type="checkbox"/> N. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> N. PACIFIC - U.S. INTERCOASTAL <input type="checkbox"/> S. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> S. PACIFIC - INDIAN OCEAN <input type="checkbox"/> WEATHER SERVICE FOR MERCHANT SHIPPING <input type="checkbox"/> ENVELOPES			
INSTRUMENTS IN NEED OF SERVICE <input type="checkbox"/> BAROMETER <input type="checkbox"/> BAROGRAPH <input type="checkbox"/> PSYCHROMETER			
DO NOT WRITE BELOW			
RECEIVED ( <i>Weather Bureau Office</i> )    			
ACTION TAKEN ( <i>Check one</i> )  <input type="checkbox"/> SUPPLIES FURNISHED AS MARKED X <input type="checkbox"/> ACKNOWLEDGED <input type="checkbox"/> ALL ACTION REFERRED TO CENTRAL OFFICE			
DATE ACTION TAKEN			







WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
SHIP'S WEATHER OBSERVATIONS			
NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V		CALL SIGN	
MAILING ADDRESS ( <i>American addresses preferred</i> )      			
CHECK FORMS OR SUPPLIES REQUIRED  <input type="checkbox"/> SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5 <input type="checkbox"/> METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9 <input type="checkbox"/> BAROGRAM, WB FORM 455-12  WEATHER MAP BASES <input type="checkbox"/> N. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> N. PACIFIC - U.S. INTERCOASTAL <input type="checkbox"/> S. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> S. PACIFIC - INDIAN OCEAN <input type="checkbox"/> WEATHER SERVICE FOR MERCHANT SHIPPING <input type="checkbox"/> ENVELOPES			
INSTRUMENTS IN NEED OF SERVICE  <input type="checkbox"/> BAROMETER <input type="checkbox"/> BAROGRAPH <input type="checkbox"/> PSYCHROMETER			
DO NOT WRITE BELOW			
RECEIVED ( <i>Weather Bureau Office</i> )   			
ACTION TAKEN ( <i>Check one</i> )  <input type="checkbox"/> SUPPLIES FURNISHED AS MARKED X <input type="checkbox"/> ACKNOWLEDGED <input type="checkbox"/> ALL ACTION REFERRED TO CENTRAL OFFICE			
DATE ACTION TAKEN			



NAME OF VESSEL S/S M/V D.S. JORDAN					NAME OF CAPTAIN							WB FORM 615-5 (8-63)								U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU										INSTRUCTIONS																				
COUNTRY OF REGISTRY					CALL SIGN					V O Y A G E	FROM					SHIP'S WEATHER OBSERVATIONS																									1. Begin a new sheet: a. For the first observation of a new month. b. At the beginning of each voyage. c. Upon sailing from one octant to another. d. Upon sailing from one ocean to another. 2. Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.) 3. Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.									
MONTH March 1967					BAROMETER NO.						TO					Check (✓) TEMPERATURES (COLS. 16-18, 28-30, 32-33): °C °F										Code the message in accordance with the "International Weather Code for Ships." 4. At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided. 5. Radio transmission—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.																								
DAY OF MONTH (G.C.T.)	DAY OF WEEK (G.C.T.)	POSITION OF SHIP			TIME (Nearest hour (0-23) (G.C.T.))	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISI-BILITY (Coded) (90-99)	WEATHER			PRESSURE		AIR TEMP. (Rounded)	TEMPERA-TURE		CLOUDS (Coded)					3-HOUR PRESSURE TENDENCY		TEMPERATURE			DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)								REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded ice data, waves over 30½ ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS										
		OCT. ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGI-TUDE (Degrees and tenths)			DI-REC-TION (True) (00-36)	SPEED (True-knots) EST MEAS <input type="checkbox"/>		PRES-ENT (Coded) (00-99)	PAST (Coded) (0-9)	CORREC-TION BAROME-TER AS READ (in., mb., or mm.)	DATE COMPARED BAROMETER CORRECTED (mb.)	CODED Sea Level (mb.)		DY BULB	WET BULB	AMOUNT OF LOW CLOUD	TYPE C <sub>L</sub> (0-9)	HEIGHT OF LOW CLOUD	TYPE C <sub>w</sub> (0-9)	TYPE C <sub>H</sub> (0-9)	COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	CHARACTERISTIC (0-9)	AMOUNT OF CHANGE (mb. and tenths)	SEA WATER			DIFF. AIR-SEA (if air colder than sea)	DEW POINT (Whole degrees)	INDICATOR	SEA / SWELL	SWELL																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44							
—	Y	Q	L <sub>a</sub> L <sub>b</sub> L <sub>c</sub>	L <sub>d</sub> L <sub>e</sub> L <sub>f</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>h</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>s</sub>	v <sub>s</sub>	a	pp	—	—	—	0	T <sub>s</sub> T <sub>c</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	—							
15		1			00		08	16	97	51	1	2988				258											248			0			1				1													
15					12	3	10	06	98	01	1	2983				252											257			0			1	49	/	1														
15					18	1	09	07	98	01	0	2990				265											261			0			1	49	3	1														
16					00	6	09	12	98	01	1	2981				270											265			0			1	49	3	1														
16					06		08	12	98	01	0	2989				269											270			0			1	/	/	1														
16					12	6	07	15	98	01	0	2986				268											269			0			1	07	3	1														
16					18	5	09	10	98	03	1	2996				286											270			0			1	09	4	1														
17					00	4	06	18	99	02	1	2984				272											270			0			1	04	7	1														
17					06	1	09	12	99	02	0	2992				272											272			0			1			1														
17					12	1	04	15																																										



WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
SHIP'S WEATHER OBSERVATIONS			
NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V		CALL SIGN	
MAILING ADDRESS ( <i>American addresses preferred</i> )      			
CHECK FORMS OR SUPPLIES REQUIRED  <input type="checkbox"/> SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5 <input type="checkbox"/> METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9 <input type="checkbox"/> BAROGRAM, WB FORM 455-12  WEATHER MAP BASES <input type="checkbox"/> N. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> N. PACIFIC - U.S. INTERCOASTAL <input type="checkbox"/> S. ATLANTIC - U.S. INTERCOASTAL <input type="checkbox"/> S. PACIFIC - INDIAN OCEAN <input type="checkbox"/> WEATHER SERVICE FOR MERCHANT SHIPPING <input type="checkbox"/> ENVELOPES			
INSTRUMENTS IN NEED OF SERVICE  <input type="checkbox"/> BAROMETER <input type="checkbox"/> BAROGRAPH <input type="checkbox"/> PSYCHROMETER			
DO NOT WRITE BELOW			
RECEIVED ( <i>Weather Bureau Office</i> )   			
ACTION TAKEN ( <i>Check one</i> )  <input type="checkbox"/> SUPPLIES FURNISHED AS MARKED X <input type="checkbox"/> ACKNOWLEDGED  <input type="checkbox"/> ALL ACTION REFERRED TO CENTRAL OFFICE			
DATE ACTION TAKEN			

U.S. GOVERNMENT PRINTING OFFICE : 1963 OF-681975

USCOMM-WB-DC



NAME OF VESSEL <div><input type="checkbox"/> S/S <input type="checkbox"/> M/V</div> <b>D.S. JORDAN</b>		NAME OF CAPTAIN		WB FORM 615-5 (8-63)		U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU	
COUNTRY OF REGISTRY		CALL SIGN		VOYAGE	FROM		SHIP'S WEATHER OBSERVATIONS
MONTH <b>March</b> 19 <b>67</b>		BAROMETER NO.			TO		
				Check (✓)		TEMPERATURES (COLS. 16-18, 28-30, 32-33): <input type="checkbox"/> °C <input type="checkbox"/> °F	

- INSTRUCTIONS**
- Begin a new sheet:
    - For the first observation of a new month.
    - At the beginning of each voyage.
    - Upon sailing from one ocean to another.
    - Upon sailing from one ocean to another.
  - Fill in the blanks on each page of the form. (Name of vessel, barometer number, etc.)
  - Enter the coded synoptic (0000, 0600, 1200, 1800 G.C.T.) or special weather observations in columns 1 through 44.
- Code the message in accordance with the "International Weather Code for Ships."
- At end of each voyage, remove all forms with completed observations and mail in the postage-free envelopes provided.
  - Radio transmission**—Copy coded data for radio transmission from the unshaded numbered groups of columns. Each code group consists of five figures with the letter X indicating missing data. Omit code group 8 and 9 in message if no data are available.

DAY OF MONTH (G.C.T.)	DAY OF WEEK	POSITION OF SHIP			TIME (Nearest hour 00-23) (G.C.T.)	TOTAL CLOUD AMT. (Coded) (0-9)	WIND		VISIBILITY (Coded) (90-99)	WEATHER		PRESSURE		AIR TEMP. (Rounded)	TEMPERATURE		CLOUDS (Coded)				COURSE OF SHIP (0-9)	SPEED OF SHIP (0-9)	3-HOUR PRESSURE TENDENCY (0-9)	TEMPERATURE			DIFF. AIR-SEA (Coded)	DEW POINT (Rounded)	WAVES (Make 2 entries if 2nd pattern observed)								REMARKS (Enter time of wind shifts, frontal passages, beginning and ending of precipitation, coded etc data, waves over 30 1/2 ft., etc.)	CHECK (✓) IF SENT BY RADIO	INITIALS				
		OCT. ANT (0-3, 5-8)	LATITUDE (Degrees and tenths)	LONGITUDE (Degrees and tenths)			DIRECTION (True) (00-36)	SPEED (True knots) MEAS <input type="checkbox"/>		PRES. ENT (Coded) (90-99)	PAST (Coded) (0-9)	CORRECTION BAROMETER AS READ (mm., mb., or mm.)	DATE COMPARED BAROMETER CORRECTED (mb.)		CODED Sea Level (mb.)	DRY BULB (Degrees and tenths)	WET BULB (Degrees and tenths)	AMOUNT OF LOW CLOUD	TYPE C <sub>L</sub> (0-9)	HEIGHT OF LOW CLOUD				TYPE C <sub>H</sub> (0-9)	TYPE C <sub>M</sub> (0-9)	SEA WATER (Degrees and tenths)			DIFF. AIR-SEA (- if air colder than sea)	DEW POINT (Whole degrees)	INDICATOR	SEA/SWELL INDICATOR (00-36) (Coded)	DIRECTION (Coded)	PERIOD (Coded)	HEIGHT (Coded)	SWELL INDICATOR (00-36) (Coded)				DIRECTION (Coded)	PERIOD (Coded)	HEIGHT (Coded)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
—	Y	Q	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>S</sub> T <sub>S</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	
20		1			00	7	07	06	98	02	1	2995				259											279			0			1	07	3	1							
20					06	0	03	08	99	02	0	3002				249											259			0			1			1							
20					12	6	36	10	98	03	1	3000				228											252			0			1	34	2	1							
20					18	0	03	06	98	01	0	3005				232											236			0			1	49	2	1							
21					00	3	01	12	97	02	0	2998				225											238			0			1	34	4	1							
21					06	0	01	09	98	02	0	3006				225											227			0			1			1							
21					12	0	01	09	98	02	0	2998				21											227			0			1	35	2	1							
22					18	2	35	10	99	02	0	2999				20											221			0			1	35	3	1							
22					00	7	33	10	98	03	1	2994				17											191			0			1	34	3	1							
					06																								0			1			1								
					12																								0			1			1								
					18																								0			1			1								
					00																								0			1			1								
					06																								0			1			1								
					12																								0			1			1								
					18																								0			1			1								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
—	Y	Q	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	L <sub>0</sub> L <sub>0</sub> L <sub>0</sub>	GG	N	dd	ff	VV	ww	W	—	—	PPP	TT	—	—	N <sub>b</sub>	C <sub>L</sub>	h	C <sub>M</sub>	C <sub>H</sub>	D <sub>S</sub>	V <sub>S</sub>	a	pp	—	—	—	0	T <sub>S</sub> T <sub>S</sub>	T <sub>d</sub> T <sub>d</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	1	d <sub>w</sub> d <sub>w</sub>	P <sub>w</sub>	H <sub>w</sub>	—	—	



SHIP'S WEATHER OBSERVATIONS

NAME OF VESSEL <input type="checkbox"/> S/S <input type="checkbox"/> M/V	CALL SIGN
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MAILING ADDRESS (*American addresses preferred*)

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CHECK FORMS OR SUPPLIES REQUIRED

☐ SHIP'S WEATHER OBSERVATIONS, WB FORM 615-5  
☐ METEOROLOGICAL RADIOTELEGRAM, WB FORM 630-9  
☐ BAROGRAM, WB FORM 455-12

WEATHER MAP BASES

☐ N. ATLANTIC - U.S. INTERCOASTAL  
☐ N. PACIFIC - U.S. INTERCOASTAL  
☐ S. ATLANTIC - U.S. INTERCOASTAL  
☐ S. PACIFIC - INDIAN OCEAN  
☐ WEATHER SERVICE FOR MERCHANT SHIPPING  
☐ ENVELOPES

INSTRUMENTS IN NEED OF SERVICE

☐ BAROMETER      ☐ BAROGRAPH      ☐ PSYCHROMETER

DO NOT WRITE BELOW

RECEIVED (*Weather Bureau Office*)

ACTION TAKEN (*Check one*)

☐ SUPPLIES FURNISHED AS MARKED X      ☐ ACKNOWLEDGED  
☐ ALL ACTION REFERRED TO CENTRAL OFFICE

DATE ACTION TAKEN



Jordan 12

Location Pacific O: 13°30'S 104°57'W to 14°46'S 105°W

Observer W. Bulmer

Date 4 March 1967 Time 0700 to 1823

Weather

Miles 76

Hours 9.1

SPECIES	NUMBERS	REMARKS
Laysan Albatross		<u>No Sightings</u>
Black-footed Albatross		
Wedge-tailed Shearwater		
Sooty Shearwater		
Slender-billed Shearwater		
Christmas Island Shearwater		
Newell's Shearwater		
Juan Fernandez Petrel	5	2
White-necked Petrel		
Kermadec Petrel	7	1 light 2
Phoenix Island Petrel		
Mottled Petrel		
Bonin Island Petrel		
Black-winged Petrel	6	1
Bulwer's Petrel		
Leach's Storm Petrel		
Red-tailed Tropicbird	4	one collected
White-tailed Tropicbird		
Blue-faced Booby		
Brown Booby		
Red-footed Booby		
Great Frigatebird		
Lesser Frigatebird		
Golden Plover		
Ruddy Turnstone		
Sooty Tern	12	1
Gray-backed Tern		
Common Noddy Tern		
Fairy Tern	2	
Pomarine Jaeger		
White-wing. Petrel	13	4
Murphy's Petrel	6	3
Red Phalarope	1	1
		Total Birds
		Total Sightings
		Total Flocks
		Total Species



Jordan 12

Location Pacific O: 10°50'S 104°45'W to 12°S 104°58'W

Observer W. Bulmer

Date 3 March 1967 Time 0800 to 1100

Weather

Miles 70

Hours 6.8

MN ~~11~~ 11°23'S 104°51'W

SPECIES	NUMBERS	REMARKS
Laysan Albatross		<u>No. Sightings</u>
Black-footed Albatross		
Wedge-tailed Shearwater		
Sooty Shearwater		
Slender-billed Shearwater		
Christmas Island Shearwater		
Newell's Shearwater		
Juan Fernandez Petrel	2	2
White-necked Petrel		
Kermadec Petrel		
Phoenix Island Petrel		
Mottled Petrel		
Bonin Island Petrel		
Black-winged Petrel		
Bulwer's Petrel		
Leach's Storm Petrel		
Red-tailed Tropicbird	2	2
White-tailed Tropicbird		
Blue-faced Booby		
Brown Booby		
Red-footed Booby		
Great Frigatebird		
Lesser Frigatebird		
Golden Plover		
Ruddy Turnstone		
Sooty Tern	36	23 adults 2
Gray-backed Tern		
Common Noddy Tern		
Fairy Tern	1	1
Pomarine Jaeger		
White-winged Petrel	<del>21</del> 31	14
Murphy's Petrel	2	2
White-thr. S. P.	2	2
Leach's Type	4	4
		Total Birds 80
		Total Sightings 24
		Total Flocks 3
		Total Species 8



## Flocks

FF0910 - Sooty Tern 13      with Shipjack  
          white Tern 1  
          RTTB 1  
          WWP 6  
          JFP 1  
1519 - WWP 6      on H<sub>2</sub>O

FF1625 - Sooty Tern 23      with Shipjack

## Associations- besides Flocks

1705 - White-winged Petrel 2  
          Murphy's Petrel 1

Birds per sighting	<u>Birds</u>	<u>Occurrence</u>
Sooty Tern	13	1
	23	1
White-winged	1	6
Petrel	6	2
	2	5
	3	1



Jordan 12

Location Pacific O: 8°16'S 104°57'W to 9°42'S 104°50'W  
 Observer W. Bulmer Date 2 March 1967 Time 0630 to 1820  
 Weather Miles 86 Hours 8.6

MN 8°58'S 104°54'W

SPECIES	NUMBERS	REMARKS
Laysan Albatross		<u>No. Sightings</u>
Black-footed Albatross		
Wedge-tailed Shearwater		
Sooty Shearwater		
Slender-billed Shearwater		
Christmas Island Shearwater		
Newell's Shearwater		
Juan Fernandez Petrel	1	1
White-necked Petrel		
Kermadec Petrel		
Tahiti, Phoenix Island Petrel	1	1
Mottled Petrel		
Bonin Island Petrel		
Black-winged Petrel	4	3
Bulwer's Petrel		
Leach's Storm Petrel		
Red-tailed Tropicbird	2	2
White-tailed Tropicbird		
Blue-faced Booby		
Brown Booby		
Red-footed Booby		
Great Frigatebird		
Lesser Frigatebird		
Golden Plover		
Ruddy Turnstone		
Sooty Tern	29	9 adult-20? 3
Gray-backed Tern		
Common Noddy Tern		
Fairy Tern	5	3
Pomarine Jaeger		
Shear-Petrel	1	1
Leach's Type	6	4
White-winged Petrel	5	5
Wh-Thr Storm Pet	4	3
Red Phalarope	3	1
		Total Birds 61
		Total Sightings 24
		Total Flocks 2
		Total Species 10



## Flocks

0825- Sooty Tern 7 5 adult

1527- Sooty Tern 20 feeding  
J.F. Petrel 1  
White Tern 2

## Associations besides Flocks

1709- White-winged Petrel 1  
White-Thr. Storm Petrel 2

## Birds per Sightings

	<u>No Birds</u>	<u>Occurrence</u>
Sooty Tern -	7	1
	2	1
	20	1
White Tern -	2	2
	1	1
Leach's Type -	3	1
	1	3



Jordan 12

Location Pacific O: 5° 37' S 105° 07' W To 6° 52' S 105° 02' W  
 Observer W. Bulmer Date 1 March 1967 Time 0700 to 1100  
 Weather Miles 75 Hours 8.8

MN 6° 13' S 105° 05' W

SPECIES	NUMBERS	REMARKS
Laysan Albatross		<u>No. Sightings</u>
Black-footed Albatross		
Wedge-tailed Shearwater		
Sooty Shearwater		
Slender-billed Shearwater		
Christmas Island Shearwater		
Newell's Shearwater		
Juan Fernandez Petrel		
White-necked Petrel		
Kermadec Petrel		
Phoenix Island Petrel		
Mottled Petrel		
Bonin Island Petrel		
Black-winged Petrel	4	3
Bulwer's Petrel		
Leach's Storm Petrel	3	3
Red-tailed Tropicbird		
White-tailed Tropicbird		
Blue-faced Booby		
Brown Booby		
Red-footed Booby		
Great Frigatebird		
Lesser Frigatebird		
Golden Plover		
Ruddy Turnstone		
Sooty Tern	9	adults 1
Gray-backed Tern		
Common Noddy Tern		
Fairy Tern	2	2
Pomarine Jaeger		
White-wing Petrel	2	2
Pterodroma	1	1
Phalarope	1	1
Leach's Type	9	7
		Total Birds 31
		Total Sightings 18
		Total Flocks 1
		Total Species 6



Flock  
0800- 9 Adult Sooty Tern Headed SE

Associations

1012- 1 Leach's  
1 Black-winged Petrel

1047- 2 Black-winged Petrel  
1 White-winged Petrel